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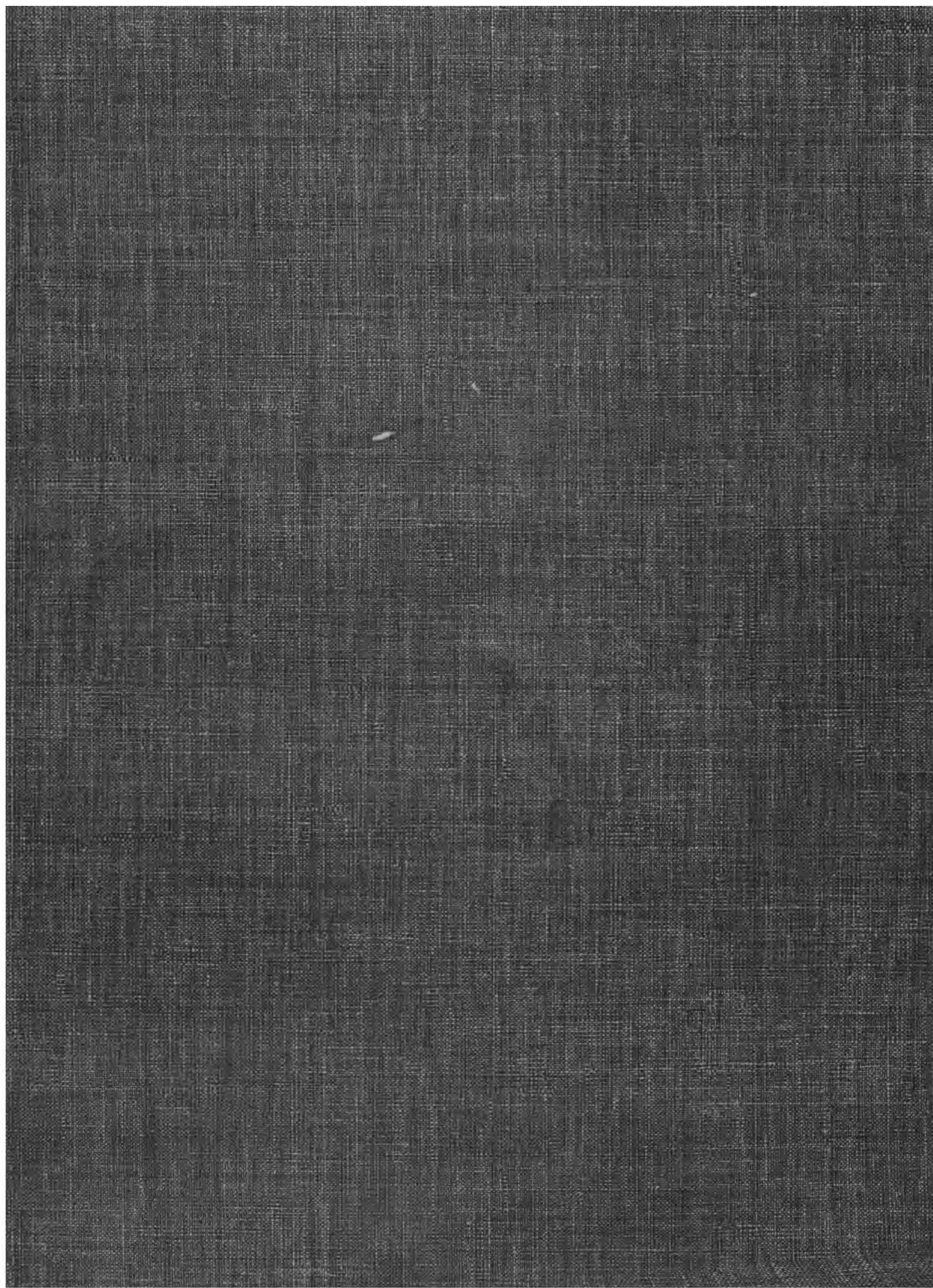


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HELEN A. KELLER.

(1893)

L. M. BELL, PHOTOGRAPHER, WASHINGTON, D. C.

HELEN KELLER

SOUVENIR

No. 2.

1892-1899

COMMEMORATING
THE HARVARD FINAL EXAMINATION
FOR ADMISSION TO
RADCLIFFE COLLEGE, JUNE 29-30, 1899.

VOLTA BUREAU
FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE RELATING TO THE DEAF
WASHINGTON CITY
U. S. A.
F.

Q.41526.

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PREFACE.

The methods pursued in the education of Miss Helen A. Keller, and the results achieved, while eliciting innumerable enquiries, causing surprise and speculation, have also given rise to considerable skepticism. This is no doubt, in large measure, due to the many exaggerated and erroneous statements which from time to time have appeared in the public press. The undeniable fact, however, remains: that no phase of educational effort embodies more clearly evidence of the essentials requisite in the successful instruction of youth generally, than do the results attained in the case of Miss Keller. With a view to embody these in consecutive form for the benefit of educators and scientists, the Volta Bureau decided to issue the present publication, and to this end addressed the following letter to Miss Keller:

WASHINGTON, D. C., *July 1, 1899.*

Miss HELEN A. KELLER,
Wrentham, Mass.

MY DEAR MISS KELLER:

The manner in which your earliest instruction was conducted evolved features of such importance in pedagogical science that the Volta Bureau deemed the subject of sufficient note to issue an account thereof under the title of HELEN KELLER SOUVENIR, reciting the process of your education from March, 1887, to March, 1892.

Since then a period of seven years has elapsed, during which, under the wise guidance of your parents, and your teacher, Miss A. M. Sullivan, you have, by dint of perseverance, successfully arrived at the threshold of a University, qualified to enter upon a collegiate course of instruction.

In honor of this achievement the Volta Bureau would now issue Souvenir No. 2, giving an account of how this result has been accomplished. With a view to give the statement the full weight of indisputable authority, this Bureau would request of you kindly to furnish a simple chronological account of the studies you pursued

during the above-indicated period. A presentation such as you and your teachers will be able to give cannot fail to prove of inestimable value to students especially, and to educators generally.

(Signed) JOHN HITZ,
Superintendent.

This elicited from Miss Keller the concise and clear statement which follows. Mr. Merton S. Keith, Miss Keller's last special instructor, likewise responded promptly to a similar request, in the able and pedagogically valuable exposition regarding the portion of her education entrusted to him. The remainder of the statements, by Dr. A. Graham Bell, Miss A. M. Sullivan, and Director Arthur Gilman, had already been published at separate periods, but they essentially contribute to render this monograph one of rare value.

The Volta Bureau takes special pleasure to express to all of the above-named contributors its sincere appreciation of their generous co-operation which enables the Bureau to present so helpful a pedagogical treatise to the world at the close of a century noted for its educational progress.

JOHN HITZ,
Superintendent of the Volta Bureau.

JANUARY 1, 1900.

THE METHOD OF INSTRUCTION PURSUED WITH HELEN KELLER

A VALUABLE STUDY FOR TEACHERS OF THE DEAF.

(Silent Educator, Flint, Mich., June, 1892.)

The great problem that confronts us in this country is, how to impart to the deaf a knowledge of idiomatic English. It must be admitted by all who have come in contact with Helen Keller that this problem has been solved in the case of at least one deaf child, not yet twelve years of age; and I therefore agree with the opinion expressed in the May number of THE SILENT EDUCATOR, that teachers of the deaf should study very carefully the method of instruction pursued in the case of Helen Keller. The difficulty of the problem must have been enormously increased in her case, by the fact that she has been totally blind, as well as deaf, from infancy. On the other hand, her unusual intellectual abilities have been of undoubted advantage.

We must not run away with the idea, however, that exceptional intellectual powers could alone account for the phenomenon. No mind, however richly endowed, could possibly arrive intuitively at a knowledge of idiomatic English expressions. It is absolutely certain that such expressions must have been taught to her before she could use them. It is, then, a question of instruction that we have to consider, and not a case of supernatural acquirement. Among the thousands of children in our schools for the deaf who are not hampered by the additional misfortune of blindness, there are surely some who are intellectually as capable of mastering the intricacies of the English language as Helen herself.

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If, then, we can find none who have in an equal period of time acquired a knowledge of idiomatic English comparable to hers, we should seek the explanation in the difference between the methods of instruction employed. Let every teacher compare Miss Sullivan's statements with the methods of instruction now in use, and note the difference.

In the first place, it is obvious that Helen's remarkable command of language is not due to any knowledge of the sign language; for she knows nothing of it. Nor is it due to oral instruction; for she had acquired complete mastery of the English language before she was taught to speak. Miss Sullivan's method approximates most closely to the "American Vernacular Method" used in the Western New York Institution. She employed the manual alphabet exclusively as a means of communication up to the period when Helen was taught to speak. She adopted the principle of talking to Helen just as she would to a seeing and hearing child, spelling into her hands the words and sentences she would have spoken to her if she could have heard, in spite of the fact that at first much of the language was unintelligible to the child. She did not pick and choose her words, but by frequent repetition of complete sentences containing ordinary idiomatic expressions, she sought to impress the language upon the child's memory and thus lead her gradually to imitate it.

The chief difference between Miss Sullivan's method and that pursued in the Western New York Institution is to be found in the use she has made of books as a means of teaching the language. Miss Sullivan says:

"I gave her books printed in raised letters *long before she could read them*, and she would amuse herself for hours each day in carefully passing her fingers over the words searching for such as she knew, and would scream with delight whenever she found one."

Before, then, Helen had the ability to understand very much of the English language, complete words and sentences containing

ordinary idiomatic expressions were constantly presented to her sense of touch in two ways :

1. By the conversation of her teacher.
2. By the presentation of books.

The first plan is substantially the method adopted in the Rochester school ; but the second is unique, and has never before, to my knowledge, been put into practical operation ; although the idea is familiar to the profession and has been frequently discussed from a theoretical point of view. It is safe to say that no pupil of the Rochester school, however brilliantly endowed in mind, has exhibited a knowledge of the English language comparable to that possessed by Helen after an equal period of instruction ; hence, the second plan adopted by Miss Sullivan is probably responsible for the difference of result.

This conclusion is confirmed by the fortunate discovery by the *Goodson Gazette* of the origin of much of the language employed in Helen's remarkable story of the "Frost King." Indeed, this discovery has given us the key to the solution of the problem in Helen's case, and we may now hold it as conclusively proved that she owes her exceptional knowledge of language largely to the influence of books. She talks and writes the language of the books she has read, or the books that have been read to her by spelling the words into her hand. In nearly all her compositions we can trace this influence. Miss Sullivan says :

"In selecting books for Helen to read it has never occurred to me to choose them with reference to her misfortune. I have read to her such publications as other children of her age read and take delight in, and the same rule has been observed in placing in her hands books, printed in raised letters. * * * In regard to the quantity and quality of books furnished Helen before she knew many words, I cannot give a list that will be of much value to teachers of the deaf, as on account of Helen's double misfortune she could not be supplied, as deaf children can who have the sense of sight, with a selection from the almost limitless number of beautifully printed and illustrated books for children of all ages which our book stores so generously display."

If, as I believe, Miss Sullivan is right in her opinion that "Helen's remarkable command of language is due to the fact that books printed in raised letters were placed in her hands as soon as she knew the formation of the letters," the discovery is one of enormous importance to teachers of the deaf, for it shows us a method of instruction capable of application to all deaf children, whatever other means of teaching may be employed. Let books be used in the school-room from the very beginning of education. The subjects should be adapted to the age of the child, but the language not chosen with special reference to his misfortune. From the multitude of books printed for the use of hearing and speaking children we can surely, more easily, make a suitable selection for the use of our pupils, than Miss Sullivan could do, when she was limited to books printed in raised letters for the use of the blind.

The great principle that Miss Sullivan seems to have had in mind in the instruction of Helen is one that appears obvious enough when it is once formulated, and one with which we are all familiar as the principle involved in the acquisition of language by ordinary hearing and speaking children. It is simply this: *That language is acquired by imitation.* This means that language must be presented to deaf children before it is understood; the children must be familiarized with the model before they have anything to imitate.

In regard to Helen Keller, Miss Sullivan says:

"I talked to her almost incessantly in her waking hours; spelled into her hand a description of what was transpiring around us, what I saw, what I was doing, what others were doing—anything, everything. Of course, in doing this, I used multitudes of words she did not at the time understand, and the exact definition of which I did not pause to explain; but I never abbreviated or omitted words, but spelled all my sentences carefully and correctly."

In communicating with our pupils also, let us use English, and English alone. Not English stilted in expression and carefully lowered to the level of the deaf child's comprehension, but ordinary idiomatic English—such as we employ with ordinary hearing and speaking children.

In oral schools this is already done, the spoken language of the people being the language of communication and thought. In manual schools let written English be the language of conversation. Spell upon your fingers the complete and idiomatic expressions you would say to your children if they could hear. In both manual and oral schools supplement your English conversation by the reading of books.

Present volumes of words to your pupils in the shape of printed pages, and you will get that frequency of repetition to the eye that is essential in order to impress the language on the memory. Little of the language at first will be comprehended, for it is obvious that the deaf child must see the language before he understands it, just as a hearing child must hear language before he can imitate it. Ordinary children learn to understand by frequent hearing, and deaf children will come to know the meaning of words and phrases by constant seeing; just as Helen has come to know their meaning by incessant repetition to the sense of touch.

The chief lesson, I think, to be learned from the case of Helen Keller is the importance of books *in the earlier stages of education*, as a means of supplementing and re-inforcing the instruction of the teacher.

The success in her case gives force to the theoretical opinion I expressed in my paper upon "Reading as a Means of Teaching Language to the Deaf:"

"I would have a deaf child read books in order to learn the language, instead of learning the language in order to read books."

Alexander Graham Bell

THE INSTRUCTION OF HELEN KELLER.

ADDRESS DELIVERED BEFORE THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING
OF SPEECH TO THE DEAF, AT CHAUTAUQUA, JULY, 1894.

Much has been said and written about Helen Keller, too much I think has appeared in type. One can scarcely take up a newspaper or a magazine without finding a more or less exaggerated account of her so-called "marvelous accomplishments," which I believe consist only in her being able to speak and write the language of her country with greater ease and fluency than the average seeing and hearing child of her age. People are surprised that a child, handicapped by the loss of the senses of sight and hearing, has thus far succeeded in overcoming the obstacles which seemed to stand in the way of her intellectual development; they marvel greatly that her progress in acquiring knowledge compares favorably with that of more fortunate children, and do not seem to understand that such things are possible. Helen's case, because of the peculiar circumstances which attend it, appeals to our sense of wonder, and, as this is one of the deep-rooted instincts of human nature, such appeals are seldom in vain; they command the attention even of those who would fain deny the possibility of the achievements which have been claimed for my pupil. It is easier for the credulous to say, "She is a miracle and her teacher is another miracle," and for the unbelievers to declare, "Such things cannot be; we are being imposed upon," than to make a conscientious study of the principles involved in her education. I, therefore, ask you to free your minds from pre-conceived notions and theories regarding this case, and give it the thought and study which it deserves, with a view to satisfy yourselves whether the same, or similar, results may be obtained when children are so fortunate as to have eyes and

MISS ANNIE M. SULLIVAN.

FALK, PHOTOGRAPHER, NEW YORK.



ears with which to see and hear; or whether rapidity and ease and delight in education like dear Helen's are only possible where children are deprived of two senses. When I was asked, some time ago, by your president, to prepare a paper on Helen Keller to be read to this Association I hesitated to give assent, feeling very reluctant to write upon a subject which is so necessarily a part of myself; but it was strongly urged that my personal experience and observation would be helpful to the teachers of the deaf, and this argument prevailed, as no other could have done; and if it shall prove to be true, and you do derive help and encouragement from anything I shall say of my seven years' experience as Helen's teacher, I shall be more than glad that I did not let this opportunity pass unimproved. I shall also have cause for gratification if I succeed in convincing you that Helen Keller is neither a "phenomenal child," "an intellectual prodigy," nor an "extraordinary genius," but simply a very bright and lovely child, unmarred by self-consciousness or any taint of evil. Every thought mirrored on her beautiful face, beaming with intelligence and affection, is a fresh joy, and this workaday world seems fairer and brighter because she is in it. And while it is unsafe to predict what Helen's future will be, I know she is destined to be the instrument of great good in the world, not only by drawing forth the sympathies, and putting into exercise the kind emotions of others, but by teaching them how great things may be achieved under the worst difficulties, and how pure and sweet and joyous may be existence under the darkest cloud.

I shall not enter into the details of Helen's education more fully than is necessary to give you a connected account of her progress. I shall assume that you are familiar with the phenomena shown in a mind debarred from the exhilarating influence of sight and sound, and that you understand the first principles involved in teaching a child thus afflicted.

LANGUAGE.

You have heard, again and again, the story of the way in which the use of five letters opened to her, who knew naught else, the door of all knowledge, of all joy ; but you can have no adequate idea of the eager impatience which filled the teacher's heart during the days she waited before that beleaguered citadel, anxious for some sign from the soul within. You have all read in Helen's own words how the idea that everything had a name suddenly flashed upon her mind. She had been taken to the pump-house to feel the water as it gushed, cool and fresh, from the pump, and while she was enjoying the pleasant sensation, I spelled the word " water " in her hand, and instantly the secret of language was revealed to her. In her story, speaking of this incident, Helen says : " That word, meaning water, startled my soul, and it awoke full of the spirit of the morning, full of joyous, exultant song. Until that day my mind had been like a darkened chamber, waiting for words to enter, and light the lamp, which is thought." From that day to this she has gone forward from hour to hour, from day to day, never falling back, her progress a perfect joy to herself, and a delight to all who have opportunity to observe her.

You must not imagine, however, that, as soon as Helen grasped the idea that everything had a name, she at once became mistress of the treasury of the English language, or that " her mental faculties emerged, full armed, from their then living tomb, as Pallas Athena from the head of Zeus," as one of her enthusiastic admirers would have us believe. At first, the words, phrases, and sentences which she used in expressing her thoughts were all reproductions of what we had used in conversation with her, and which her memory had unconsciously retained. And, indeed, this is true of the language of all children. Their language is the memory of the language they hear spoken in their homes. Countless repetition of the conversation of daily life has impressed certain words and phrases upon their

memories, and when they come to talk themselves, memory supplies the words they lisp. Likewise, the language of educated people is the memory of the language of books.

Language grows out of life, out of its needs and experiences, its joys and sorrows, its dreams and realities. At first my little pupil's mind was all but vacant. Up to the time when I began to teach her, she had no means of registering on its blank pages her childish impressions and observations. She had been living in a world she could not realize. *Language* and *knowledge* are like Siamese *twins*—they are indissolubly connected; they are interdependent. Good work in language presupposes and *necessitates* a real knowledge of things. As soon as my little pupil grasped the idea that everything had a *name*, and that by means of the manual alphabet these names could be transmitted from one to another, I proceeded to awaken her further interest in the *objects* whose names she learned to spell with such evident joy. *I never taught language for the PURPOSE of teaching it*; but invariably used language as a medium for the communication of *thought*; thus the learning of language was *coincident* with the acquisition of knowledge. In order to use language intelligently, one must have something to talk *about*, and having something to talk about is the result of general *culture*; no amount of language training will enable our little children to use language with ease and fluency, unless they have something clearly in their minds which they *wish* to communicate, or unless we succeed in awakening in them a desire to know what is in the minds of *others*. From the very first, Helen was eager and enthusiastic in the pursuit of knowledge. In the little story of her life she says: "I was never still during the first glad days of my freedom. I was continually spelling and acting out words as I spelled them. I would run, skip, jump, and swing, no matter where I happened to be. Everything I *touched* seemed to *quiver with life*. It was because I saw everything with the new, strange, beautiful sight which had been given me."

She had one advantage over ordinary children,—nothing from without distracted her attention; so that each new thought made upon her mind a distinct impression, which was rarely forgotten. At first I did not attempt to confine my pupil to any systematic course of study. I felt that she would accomplish more if allowed to follow her own natural impulses. I always tried to find out what interested her most, and made that the starting-point for the new lesson, whether or not it had any bearing on the lesson I had planned to teach, and her eager inquiries often led us far away from the subject with which we began. During the first two years of her intellectual life, I required Helen to write very little. In order to write with profit to himself, a child must have something to write about, and having something to write about, necessitates some mental preparation. The memory must be stored with ideas, and the mind must be enriched with knowledge before writing becomes a natural and pleasurable effort. Too often, I think, children are required to write before they have anything to say. Teach them to think and read and talk without self-repression, and they will write without self-consciousness.

Helen acquired language in an objective way, by practice and habit rather than by study of rules and definitions. Grammar, with its puzzling array of classifications, nomenclatures, and paradigms, was wholly discarded in her education. She learned language by being brought in contact with the *living* language itself; she was made to deal with it in everyday conversation, and in her books, and to turn it over in a variety of ways until she had mastered its anatomy. As I have at another time stated, I talked to her almost incessantly in her waking hours, and encouraged her to talk to me. I spelled into her hand a description of what was taking place around us; what I saw; what I was doing; what others were doing; anything, everything. I talked to her with my fingers as I should have talked to her with my mouth had she been a hearing child; and, no doubt, I talked much more with my fingers, and more con-

stantly than I should have done with my mouth; for, had she possessed the use of sight and hearing, she would have been less dependent on me for entertainment and instruction.

Very early in her education I led her to observe and describe flowers and animals. A flower or insect often furnished material for a long and intensely interesting language-lesson. I would catch an insect and allow Helen to examine its tiny wings, antennæ and plump little body; then she would open her hand, and bidding it a tender goodbye, let it fly away in the sunshine. Helen says, in speaking of her early education: "I did not have regular lessons then, as I do now. I just learned about everything, about flowers and trees, how they absorbed the dew and sunshine; about animals, their names and all their secrets, 'how the beavers built their lodges, where the squirrels hid their acorns, how the reindeer ran so swiftly, why the rabbit was so timid.' Once I went to a circus, and Teacher described to me the wild animals and the countries where they live. I fed the elephants and monkies; I patted a sleepy lion and sat on a camel's back. I was very much interested in the wild animals, and approached them without fear; for they seemed to me a part of the great, beautiful country I was exploring." The vegetable-garden and her mother's flower-garden, her numerous pets and the domestic animals were a never-ending source of instruction and enjoyment to her; and in thus being brought in close touch with nature, she learned to feel as if every little blade of grass had a history, and to think of every bud as if it were a little child, and knew and loved her. I did not attempt to make these lessons in zoology and botany formally scientific. I introduced them early in her education for the purpose of cultivating her observation, furnishing themes for thought, and to fill her mind with beautiful pictures and inspiring ideals. Material for language-lessons, knowledge of facts, and greater power of expression were ends obtained through these lessons; but they were not the most important aims.

I believe every child has hidden away somewhere in its being noble qualities and capacities which may be quickened and developed if we go about it in the right way ; but we shall never properly develop the higher natures of our little ones while we continue to fill their minds with the so-called rudiments. Mathematics will never make them loving, nor will the accurate knowledge of the size and shape of the world help them to appreciate its wondrous beauties. Let us lead them then, during the first years they are intrusted to our care, to find their greatest pleasure in Nature, by training them to notice everything familiar or strange in our walks with them through the fields, the woods, on the hill tops, or by the sea-shore. The child who loves and appreciates the wonders of the out-door world will never have room in his heart for the mean and low. Such a child will have risen to a higher plane, and in a wise study of God's laws in Nature he will ever find his highest joy.

Books have played a very important part in Helen's education. As soon as she had learned the raised letters, I gave her books to read, and I doubt very much if I shall be able to make you understand the importance and advantage that books have been to her in acquiring a command of idiomatic English ; the advantage has certainly been incalculable. I am confident that the ease and fluency with which she uses language are in large part due to the fact that embossed books were placed in her hands as soon as she had learned the letters. She has, like many hearing persons, a natural aptitude for comprehending and using language as soon as it has been acquired. I think, also, much of the fluency with which she uses language is due to the fact that nearly every impression which she receives comes through the medium of language. But, after due allowance has been given to Helen's natural aptitude for acquiring language, and from the advantage resulting from her peculiar environment, I think that we shall still find that the constant companionship of good books has been of supreme importance in her education. It may be true, as some claim,

that language cannot express to us much beyond what we have lived and experienced ; but I have always observed that children invariably manifest the greatest delight in the lofty poetic language, which we are too ready to think beyond their comprehension. "This is all you will understand," said a teacher to a class of little children, closing the book which she had been reading to them. "Oh, please read us the rest, even if we don't understand it," they pleaded, delighted with the rhythm, and the beauty which they felt, even if they could not interpret. In speaking of what books have been to her, Helen says: "I read my first story on May-day, and, ever since, books and I have been loving friends and inseparable companions. They have made a bright world of thought and beauty all around me ; they have been my faithful teacher in all that is good and beautiful ; their pages have carried me back to ancient times, and shown me Egypt, Greece, Rome ; they have introduced me to kings, heroes, and gods ; and they have revealed to me great thoughts, great deeds. Is it strange that I love them?" It is not necessary that a child should understand every word in a book before he can read with pleasure and profit. Indeed, only such explanations should be given as are really essential. Helen drank in language which she at first could not understand, and it remained in her mind until needed, when it fitted itself naturally and easily into her conversation and compositions. Thus she drew her vocabulary from the best source,—standard literature, and when the occasion came, she was able to use it without effort. Indeed it is claimed by some that she reads too much, that a great deal of originative force is dissipated in the enjoyment of books,—that, when she might see and say things for herself, she sees them only through the eyes of others, and says them in their language ; but I am convinced that original composition without some mental preparation in the way of conscientious reading, is an impossibility. She has had the best and purest models in language constantly presented to her, and her conversation and her writings are unconscious reproductions of what

she has read. Reading, I think, should be kept independent of the regular school exercises. Children should be encouraged to read for the pure delight of it. The attitude of the child toward his books should be that of unconscious receptivity. This means true reading; reading not only for entertainment, but for intellectual enrichment and enlargement. The great works of the imagination ought to become a part of their lives, as they were once of the very substance of the men who wrote them. It is true that the more sensitive and imaginative the mind is that receives the thought-pictures and images of literature, the more nicely the finest lines are reproduced. Helen has the vitality of feeling, the freshness and eagerness of interest, and the spiritual insight which proclaims the artistic temperament, and naturally she has a more active and intense joy in life, simply as life, and in nature, books, and people, than less gifted mortals. Her mind is so filled with the beautiful thoughts and ideals of the great poets, that nothing seems commonplace to her; for her imagination colors all life with its own rich hues.

SPEECH.

It was three years from the time when Helen began to communicate by means of the manual alphabet, that she received her first lesson in the more natural and universal medium of human intercourse—oral language. She had become very proficient in the use of the manual alphabet, which was her only means of intercourse with the outside world; through it she had acquired a vocabulary which enabled her to converse freely, read intelligently, and write with comparative ease and correctness. Nevertheless, the impulse to utter audible sounds was strong within her, and the constant efforts which I made to repress this instinctive tendency, which I feared in time would become unpleasant, were of no avail. I made no effort to teach her to speak, because I regarded her inability to watch the lips of others as an insurmountable obstacle in the way of her acquiring

oral language. But she gradually became conscious that her way of communicating with others was different from that used by those around her, and one day her thoughts found expression in the following questions: "How do the blind girls know what to say with their mouths? Why do you not teach me to talk like them? Do deaf children ever learn to speak?" I explained to her that some deaf children were taught to speak, but that they could see their teachers' mouths, and that that was a very great assistance to them. But she interrupted me to say she was very sure she could feel my mouth very well. Soon after this conversation a lady came to see her, and told her about the deaf and blind Norwegian child, Ragnhild Kaata, who had been taught to speak, and understand what her teacher said to her by touching his lips with her fingers. Helen's joy over this good news can be better imagined than described. She at once resolved to learn to speak, and from that day to this she has never wavered in that resolution. She began immediately to make sounds which she called speaking, and I saw the necessity of correct instruction, since her heart was set upon learning to talk, and feeling my own utter incompetence to teach her, never having given the subject of articulation a moment's study or thought, I went with my pupil, for advice and assistance, to Miss Sarah Fuller. Miss Fuller was delighted with Helen's earnestness and enthusiasm, and at once commenced to teach her. In a few lessons she learned nearly all of the English sounds, and in less than a month she was able to articulate a great many words distinctly. She was not content from the first to be drilled in single sounds; but was impatient to pronounce words and sentences. The length of the word, or the difficulty of the arrangement of the elements, never seemed to discourage her. But, with all her eagerness and intelligence, learning to speak taxed her powers to the utmost. There is, however, always a certain exhilaration in fighting against difficulties and in surmounting obstacles; struggle, however arduous and painful, has an element of inspiration.

There is a satisfaction of seeing from day to day, or perhaps from hour to hour, the evidence of growing mastery and the possibility of final success. And Helen's success has been more complete and inspiring than any of her friends dreamed or expected, and the child's own delight in being able to utter her thoughts in living and distinct speech, is shared by all who witness her pleasure when told by strangers that they understand her.

I have been asked a great many times whether I think Helen will ever speak naturally; that is, as other people speak. I am hardly prepared to decide that question, or even give an opinion regarding it. I believe that I have hardly begun yet to know what is possible. I have not given the subject all the time and study and thought which it requires, and which I intend to give in the near future. Teachers of the deaf often express surprise that Helen's speech is as good as it is, when she has not received any regular instruction in speech since the first few lessons given her by Miss Fuller. I can only say in reply, "This is due to habitual imitation and practice! practice! practice!" Nature has determined how the child shall learn to speak, and all we can do is to aid him in the simplest, easiest way possible, by encouraging him to observe and imitate the slightest vibrations resulting from articulation.

In conclusion, it may interest you to know to what stage Helen has attained in her education at the present time. During the past year she has made considerable progress in the study of Arithmetic; but Latin, History, Literature, and Geography are her favorite studies, and I venture to assert that very few boys and girls of her age have a more extensive knowledge of these subjects than my pupil. In these studies she is greatly assisted by her vivid imagination, which translates words into images, and sentences into pictures. The following passage from her diary indicates, more clearly and forcibly than any words of mine could do, Helen's attitude toward her studies, and shows that she is eager and as enthusiastic in her pursuit of knowledge now as she was six years ago:—

"DEAR DIARY: To-day is the thirteenth of October, 1893, and I have some pleasant news for you. My studies began to-day, and I am very, very glad. I study Arithmetic, Latin, History, Geography, and Literature. I am glad, because I want to learn more and more about everything in this beautiful, wonderful world. Every day I find how little I know; for I catch glimpses on all sides of treasures of history, language, and science,—a beautiful world of knowledge,—and I long to see everything, know everything, and learn everything. I do not feel discouraged when I think how much I have to learn, because I know the dear God has given me an eternity in which to learn it.

"I used to say I did not like Arithmetic very well, but now I have changed my mind; for I see what a good, useful study it is. It helps me to think clearly and logically and strengthens my mind in many ways. I try to be very calm and patient now when the examples seem very hard, but sometimes in spite of my great effort to keep my mind in the right place, it will flutter like a little bird in a cage and try to escape into the pleasant sunshine; for nice and useful as Arithmetic is, it is not as interesting as a beautiful poem or a lovely story.

"Latin is a very beautiful language, and I hope I shall be able to speak and read much of it when I go home next Spring. Already I begin to feel better acquainted with the grand old heroes of Rome, since I know a little of the language in which they thought and talked so long ago.

"I love Literature and History too, because they teach me about the great things that have been thought and dreamed and achieved in the world, and help me to understand 'how the law of good worketh incessantly, without halting, without rest; planting seeds of knowledge here, through earth to ripen, through Heaven to endure.'"

But it is Helen's loving and sympathetic heart rather than her bright intellect which endears her to everybody with whom she comes in contact. She impresses me every day as being the happiest child in the world, and so it is a special privilege to be with her. The spirit of love and joyousness seems never to leave her. May it ever be so. It is beautiful to think of a nature so gentle, pure, and loving as hers; it is pleasant also to think she will ever see only the best side of every human being. While near her, the roughest man is all gentleness, all pity; not for the world would he have her know that he is aught but good and kind to every one. So we see, pathetic as Helen's life must always seem to those who enjoy the blessings of sight and hearing, that it is yet full of brightness and cheer and courage and hope.

Annie M. Sullivan

MISS HELEN ADAMS KELLER'S FIRST YEAR OF COLLEGE PREPARATORY WORK.

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The first year of college preparatory work done by Miss Helen Adams Keller closed in June, 1897. A brief review of it will be of interest to all who have at heart the mental cultivation of the deaf or the blind. In response to a request from the editor of the *Century* magazine, I prepared for him a statement in brief of the beginning of the year of which I purpose now to present a more complete summary. This was published in January, 1897.

In September, 1896, Miss Keller entered the "Cambridge School" for girls, as a candidate for college preparation. She was accompanied by her teacher, Miss Annie M. Sullivan, the plan being to have both in every class, Miss Sullivan being the interpreter to Helen of the instruction of the respective teachers. For the first time in her life, Helen was to live in the constant society of seeing and hearing persons, and to be taught in classes of normal pupils, by instructors who had no experience in teaching the deaf or the blind. Her companionship, not alone in school-time but in the hours at home, was to be supplied by normal persons. I had, myself, no experience in work with any but the ordinary seeing and hearing pupils, and I was unable to converse with Helen, except so far as I did it by allowing her to talk with her mouth and to be embarrassed by the difficulty of taking my words from my lips with her fingers.

Though Helen had not before been in a course preparatory to college, she had been taught much English, and it was evident that she needed little more instruction in that direction beyond the reading and critical study of the books specially assigned by the colleges for

that purpose for the year 1897. She had also made good progress in French, and it was thought that some review, united with drill in reading French, would suffice to fit her for the examination in that language. Two years previous to her coming to Cambridge, Helen had received instruction in Latin, amounting, as Miss Sullivan estimated, to one-half of a year's drill in this School. This instruction proved to have been of the best quality, but it was felt that the lapse of time must have left the impressions somewhat dim in Miss Keller's mind. German was a subject in which Helen proved uncommonly facile, and we were sure that a good year's work would fit her for both the "elementary" and the "advanced" examinations. All the expectations formed at the beginning of the year were more than fulfilled, as we shall see.

It was thought probable that at the end of the year Miss Keller would be able to pass the examinations set for her admission to Harvard College, in English, History, French, and Elementary and Advanced German, making "seven hours," according to the schedule of the College. This, if accomplished, would constitute the "preliminary examination," and she would be permitted to complete the work at some other time. The usual method of admission to Harvard College requires the candidate to pass in sixteen hours, twelve being called "elementary" and four "advanced." At least five hours must be passed at a time to make any record. To prepare for the seven hours proposed would require pretty hard study, but I was willing that Helen should try it, because she seemed to be so nearly fitted that it would be useless to postpone the work and thus, perhaps, add to the burden of the following year. Besides, these examinations once off, the way would be plain for more leisurely work in the years that were to follow. While preparation for these tests was going on, Helen was to study arithmetic, in order to be able to begin algebra the next year. Mathematics is not her favorite study, and though she does good work in arithmetic, she does not excel there as she does in language-subjects.

One of the questions that demanded attention at an early stage was, Who shall conduct the examinations? At Harvard, the candidates are numbered, and to those who determine the value of their work they are known by numbers only. It was, of course, impossible to conceal the fact that Helen's papers were written by her, because she was obliged to use a type-writer, and all other candidates would use pen or pencil. Some one would be obliged to serve as eyes for Miss Keller—some one who could testify that she was the person who actually produced the written paper. Miss Sullivan, naturally, felt unwilling to act in this capacity. Any one able to use the manual alphabet might read the papers to her, but it was evident that much more than that was necessary. It finally became plain to all that I was the proper person. As a member of the corporation of Radcliffe College, familiar with Harvard examinations for many years, I should be at home in all details. I was, as has been said, unable to use the manual alphabet. It seemed improbable that I could master it sufficiently to be able to put Helen in the position of a seeing candidate, but I determined to make the effort. I could be satisfied with no mere practice; I wanted to do actual work with Helen. I therefore undertook to give her a portion of her work in English—to read to her examination papers in French, German, etc., as might be necessary. At best it would be impossible for me, or, indeed, for any one, to release Helen from the handicap which embarrassed her, for all the other candidates were able to read and reread their papers, to read them in parts, and to read over all that they wrote as they progressed. It would not be practicable for Helen to have her examination in the room with the other candidates, because her type-writer would interrupt those around her. The whole embarrassment was overcome by a vote of the council, which placed me in charge of Helen's examination, gave me an allowance of time for my imperfect reading, and permitted me to select a quiet room for the ordeal. At about Christmas-tide I began to read Shakespeare and other authors to Helen, she constantly complimenting me upon the good rate of my progress!

All difficulties in the general work vanished as we went on. The teacher of German became interested and learned to read to Helen with her hand. Others did the same. Though Miss Sullivan found herself fully occupied, as usual, she had helpers in reading the great amount that Helen needed in English, French, and German. We had, however, difficulty in getting books made promptly enough, in spite of the willingness of friends in London, in Philadelphia, and elsewhere to hasten all such work. The Perkins Institution lent us some books, but there were others that it was necessary to have put into Braille specially for our use. The avidity with which Helen read whatever was placed within her range kept her always ahead of the respective lessons. School-girls sometimes study as though it were a "task," as indeed our fathers called it, but Helen never. With her a new text-book was a fresh and delightful field for investigation. Difficulties were merely new heights to be scaled. The exhilaration of overcoming obstacles kept this school-girl as much interested as another might be in achieving conquest in a game of golf or tennis.

The actual school work during the year showed little difference between the treatment of Helen and the other pupils. Miss Sullivan sat at Helen's side in the classes, interpreting to her with infinite patience the instruction of every teacher. In study-hours Miss Sullivan's labors were even more arduous, for she was obliged to read everything that Helen had to learn, excepting what was prepared in Braille; she searched the lexicons and encyclopædias, and gave Helen the benefit of it all. When Helen went home Miss Sullivan went with her, and it was hers to satisfy the busy, unintermitting demands of the intensely active brain, for, though others gladly helped, there were many matters which could be treated only by the one teacher who had awakened the activity and had followed its development from the first. Now it was a German grammar which had to be read, now a French story, and then some passage from Cæsar's Commentaries.

It looked like drudgery, and drudgery it would certainly have been had not love shed its benign influence over all, lightening each step and turning hardship into pleasure.

Space will not permit me to dwell at large on the steps of progress. It was in reading and studying with Helen that my insight of her mind became the clearest. I read Shakespeare with her, and she showed the greatest pleasure in the light and amusing touches in "As You Like It," as well as in the serious passages of "King Henry V." We took up Burke's celebrated speech on Conciliation with the Colonies, and every point made an impression. The political bearing of the arguments, the justice or injustice of this or that, the history of the times, the characters of the actors, the meaning of the words and the peculiarities of style, all came under review, whether I wished it or not, by the force of Helen's interest.

Without a break, we took up Macaulay's Essay on Samuel Johnson, and the interest flagged. There was no such stimulus in the style as I had noticed in reading Burke. There was sympathy for the poor literary man, there was amusement at his strange life, there was rejoicing at every one of his successes, and there was appreciation for the fluent style of Macaulay; but everything was easy. There were few words to be explained, no difficulties to be overcome. I was sorry to see the lack of interest, and suddenly one day I stopped and instituted a comparison of the style of Burke and Macaulay. At once the former interest returned. There was now something to do which was worthy of doing. The mind was obliged to exert itself, and so long as this was the case Helen was absorbed.

While reading Burke, I made a memorandum of certain words that Helen did not understand, and of others which she had no difficulty with. Here are some that she did not understand :

paper government	fertile	fomented	juridical
pruriency	ballast	excrescence	vouchers
inspector-general	minima	commodities	equinoctial

complection	predilection	chicane	inheres
criterion	bias	theorem	corollaries
coeval	dissidence	smattering	animadversion
mercurial	litigious	pounces	truck
operose	abrogated	concussion	inconvenient
radical	prosecute	comptroller	overt
indictment	pedantic	tantamount	exquisite
preposterous	heterogeneous	ill-husbandry	marches
tampering	paradoxically	sterling	clandestine
subversion	consequential	"cord of a man"	chimerical
contingent	quantum	composition	

Here are some of the words that Helen had no difficulty with :

policy	mace	captivated	capital
impunity	shoots	aversion <i>from</i>	mediately
latitude	numerous	smartness	topped
lair	dragooning	inquisition	nice
magazines	civility	impositions	futility
competence	biennially	questioned	congruity
immunity	illation	acquiesces	

It is unnecessary to say that many of these words are used by Burke in senses quite different from those now in vogue.

When we encountered "heterogeneous," Helen said, "I have never seen that word, but it is evidently of Greek origin," though she had not studied Greek. When Burke said that Parliament had disarmed Wales by statute, and now proposed to disarm America by "an instruction," Helen quietly remarked, "Rather polite, was it not?" When I explained the meaning of "chicane," and showed her the particular trick of the New Englanders by which they nullified an act of Parliament, Helen exclaimed at once, "That was the way in which the case was decided in 'The Merchant of Venice!' It was a legal quibble that Bellario taught Portia." This leads me to remark again, as I have done before, in print, I think, that the more I study the action of Helen's mind, the more emphatic becomes my conviction that its logical action is its most pronounced and peculiar trait. I took occasion to test her verbal memory in connection

with the list of words that she had not understood. I went over them just before the June examinations to see how much of the explanations that had been given her she could recall. The study of Burke had extended from the close of February to the first of April. It was now about the first of June. Many of the words were still not comprehended fully, though they had been at the time of the reading in April and March. The explanation was repeated.

The Harvard examinations were held from the twenty-ninth of June to the third of July. As that time approached, I practised Helen on examination-papers of previous years in French, German, History, and Latin. Latin was not one of the subjects that we had intended to permit Helen to be examined in. She had not studied the subject one-half so long as normal pupils are accustomed to study it. I was surprised, as the close of the work of the year approached, to have the teacher of Latin tell me that Helen was as well fitted to take the admission examination in her subject as any of the candidates who had been through the usual course. I hesitated, fearful at first lest the warm feeling that I knew had grown up between Helen and her teachers might have led to a too partial estimate of the pupil's ability. However, it was shown to me that no doubt existed, and I gave my consent, thus adding two hours to the number that we had at first planned, making nine for these "preliminaries," and leaving but seven hours for the "finals," which were to come at some future year.

So much for the interesting process of preparing a young girl blind and deaf for the entrance examinations of Harvard College. It only remains to summarize the result. Examinations are not a perfect test, but my experience of many years, during which hundreds of girls have passed under my personal view, has satisfied me that among the great number who are examined there are very few who are not, on the whole, properly weighed and classified. It is usually the nervous, anxious candidate who fails when she is prepared; and

occasionally, on the other hand, a cool, collected girl will pass though she is not perfectly fitted. There was little anxiety about the result in the present instance. Helen was able to marshal her mental forces and to bring them to bear upon the subject before her much better than the average girl. It is, doubtless, a wonder that she could be fitted at all; but after we have overcome our surprise at that, we find no difficulty in believing that she is able to accomplish any mental feat that is possible to woman. The examination was to be a test, not only of the ability of Miss Keller, but also of the processes designed and carried out for years by Miss Sullivan.

It happened that Helen's most difficult examination was the first on the list. Advanced German came on Tuesday, June 29th, from nine to eleven o'clock. I had arranged to have a room where we could be free from all interruptions, and I had posted at the door a man who had orders not to admit any one except officers of Harvard or Radcliffe College. The papers were given out at nine o'clock at Harvard College, and were brought to me under seal. Helen sat at her typewriter, and I took a position at her side, so that my right hand could grasp hers. We had often done the same thing before, but no previous effort had been quite like this one, and we both were conscious of it. On other occasions we had tried to see if we could cope with the paper; now we were actually to write something to be submitted to Harvard examiners as a final test. It was plain to me that Helen felt this. I read the entire paper through at first, and then I read it sentence by sentence. Helen repeated the words with her voice as my hands made the signs, because I was determined that she should not be prejudiced by any failure of mine to present to her mind the paper as it was printed, and, as I could not read the manual alphabet, there was no way to make sure of this except by having her repeat the words that I spelled.

The paper was not an easy one. It was evident that Helen felt that. Her brow was knit; her fingers seemed to want to clutch an

idea; perspiration came; but with regularity the type-writer spelled out the English of the German text. Helen forged ahead, and I anxiously kept her supplied with new sentences to translate. By ten forty-one she had put into English all of the German from the German books that she had read. Then she took up the English to be translated into German. At eleven five this, too, had been done. Next there was a passage from a book that Helen had never seen. This was completed at eleven forty-four. I then read to Helen what she had written, so far as the time permitted, and she dictated such changes as she thought necessary. These I interlined. It then went to the examiners, with a certificate from me that it was the sole and unaided work of candidate number 233.

There was no ordeal on Wednesday, but at nine on Thursday the examination in Latin began. I read the paper just as I had read that in German. It was not easy, but it was plain that it did not present the difficulties that the German paper had, and Helen was very cool. She was confident. The work went steadily forward, and was duly completed and sent to the College as before. On Friday, July 2, at a little before noon, we began the one-hour paper on the history of Greece and Rome, and it was followed, with a slight intermission, by the two-hour paper on English. These were uneventful. They were play for Helen, though naturally there were matters in the history papers of which she had never heard. She could have written indefinitely on both of these papers. We had spent weeks in the critical study of Burke's speech, but not a question was based on it. We had thought that DeFoe's journal of the plague was too horrible to trouble Helen with, and but a few pages had been read to her. She found some questions on it, however, and she was able to write satisfactorily on the subject.

On Saturday there was one hour for Elementary French, and one for Elementary German. Both of these were easy, though the German is more to Helen's taste than the French. While we were going

through this German paper, there was a ring at the door, and Professor Schilling was announced. He had come to let me know that Helen had been successful in her advanced German, the paper being pronounced excellent. It was very kind of the Professor to let me know this, for it gave Helen her first encouragement, and she went off for her summer vacation in an hour with a lighter heart, though I believe she had no doubts at any time.

Since then I have heard from all of the examinations. She was successful in every subject and took "honors" in English and German. I think that I may say that no candidate in Harvard or Radcliffe College was graded higher than Helen in English. The result is remarkable, especially when we consider that Helen has been studying on strictly college preparatory lines for one year only. She had had long and careful instruction, it is true, and she had had always the loving ministrations of Miss Sullivan, in addition to the inestimable advantage of a concentration that the rest of us never know. No man or woman has ever in my experience got ready for these examinations in so brief a time. How has it been accomplished? By a union of patience, determination, and affection, with the foundation of an uncommon brain.

Arthur Gilman

FINAL PREPARATION FOR COLLEGE.

Helen Keller's studies under my direction began early in February, 1898, and ended in June, 1899, occupying in all about thirteen months. During the first five of these months instruction and recitation came only once a week, in a period of three and a half hours. During about eight months, beginning with the middle of October, 1898, we had lessons five times a week, in periods of somewhat more than one hour each. In June, 1899, we worked together only twice, she being in Wrentham, Mass., with Miss Sullivan, in a lakeside cottage, pursuing her studies under my directions, partly by mail; and also enjoying the pleasures of outdoor life, such as boating and bathing and bicycle riding. Considering the limitations of time and other conditions to be described governing our work, one may readily judge, as this narrative proceeds, whether the results were commensurate with the efforts.

A few weeks before this campaign of study began, Miss Keller had been taken from the Cambridge School, in which, the year before, she had studied in preparation for the preliminary examinations for admission to Radcliffe College, under circumstances which had seriously unnerved so gentle and sensitive, and withal so ambitious, a scholar. It is not for me here to dilate upon those circumstances, or pass judgment upon those responsible for them. I allude to them because I was warned by one of Helen's best friends, the one who engaged me to tutor her, to be on the watch for any signs of overwork, or undue nervous strain. I was told that it was a common impression that she was often under too high pressure of work, and in danger of breaking down. It was implied that there existed considerable difference of opinion about this, and that the Director of the Cambridge Fitting School, above mentioned, entertained the belief of her being overworked. I was very solemnly cautioned against

MERTON S. KEITH.

NOTMAN, PHOTOGRAPHER. BOSTON, MASS.



incurring the risk of the realization of such woful forebodings. Especially just at the juncture where we then were, with Helen hardly recovered from the shock of recent events, the question of health was of prime importance.

It was allowed by all that my one session a week ought to be two or three sessions of shorter periods. I could not, in the three and one-half hours Saturdays, do justice to all the work which Helen could prepare for me during the preceding week. I always had to leave much unfinished, or even untouched. And yet the Saturday period was in one sense too long; the strain of continuous drill or instruction, mostly in Mathematics, for three and a half hours was often very great, even for me. Miss Sullivan was sometimes well nigh exhausted, and now and then I gave Helen a respite by changing from Mathematics to Greek. For it was the Algebra and the Plane Geometry that we spent the most time on. The Latin we at first omitted, and soon, in order to gain time Saturdays for Mathematics, I corrected at home written work in Greek consisting of translations from Greek into English and from English into Greek, my corrections being supplemented by liberal remarks on constructions and principles suggested by her work.

But these difficulties attending our work at Wrentham were considered unavoidable. It was hardly possible for me to go twice a week to Wrentham, a place about twenty-six miles from Boston with inconvenient railway accommodations. The journey thither and back and the lessons took nearly seven hours. The railway timetable fixed for us the period. The expense of more frequent lessons would have been great. It was intended that Helen should for awhile at least pursue her studies rather leisurely. Her residence in Cambridge, or in Boston, would have been better educationally, and for me personally; but Wrentham was, all things considered, thought to be the best place for Helen. The home-life there,—the outdoor recreations, were indeed ideal. A country farmhouse, children,

driving, bicycle riding, boating, bathing, wood and field rambling, a free and joyous life in close communion with nature,—may not these things be reckoned among the means of wholesome education?

Director Gilman, of the Cambridge School, had laid out for Helen a three years' course of study in preparation for the final examinations at Radcliffe; it was hoped that I might be able to encourage the belief that entrance to Radcliffe could be attained in 1899. Could Miss Keller endure the strain? Every one, including the persistent, energetic, indomitable Miss Sullivan, seemed utterly discouraged over the Algebra and Geometry. I was pathetically asked again and again, during the first five or six weeks, whether we were torturing poor Helen on the rack of Mathematics; whether there was a grain of profit to her in such studies, or any hope of success in the examinations in them. Of course, Helen neither liked them nor saw any good in them. One rarely likes, or sees the use of, failure. Delight comes from success, and appreciation from ample knowledge. Appeal had been made to Miss Irwin, Dean of Radcliffe, who had suggested that Helen might be allowed to substitute at the examinations subjects more congenial to her.

Such, then, were some of the difficulties encountered at the beginning; hard, perhaps insurmountable heights to be climbed by one who (it was surmised) had not the strength to climb and who, if the summit should be reached, could not see all the glories there. Worse than this, it was hinted that with Helen a break-down might be fraught with more terrible consequences than in ordinary cases, that total collapse would ensue.

My duties, then, at first were those of the kind physician, as well as those of the ambitious tutor. And here let me gratefully make known the debt we owe—Miss Keller, Miss Sullivan, and I—to Mr. and Mrs. J. E. Chamberlin, at whose house in Wrentham were found the comforts and delights of home. It was upon them that I chiefly relied for information of Helen's physical condition, and I was partly

guided by them in arrangements for work; while in innumerable ways and in frequent emergencies they have been a comfort and help to Helen and Miss Sullivan.

But fears of collapse were groundless. At least I soon came to that conclusion. Miss Sullivan, to whom I communicated these fears—not at first, but after three or four weeks—declared that Helen had not had, or needed, a physician for years; that, to be sure, she had been in a terribly nervous state after the trouble in Cambridge, but that then there seemed no especial danger. Success, too, lightened work. The Algebra snarls we soon began to unravel, and in their place to weave some fabrics of fair texture. The Geometry was more perplexing, but gave us some new hopes. So that I was bold enough to argue at some length in favor of the Mathematics in a letter to Mrs. Laurence Hutton, who had written to me her doubts on that subject and had consulted Miss Irwin. It seemed to me that Helen needed the drill in accuracy and in logic afforded by Mathematics. History, literature, and languages she masters with wonderful facility. There seems no limit to the possibility of her achievement there. Her joy in life and her power of service to the world (as far as these result from mental attainments through education) will find their chief sources there. The poetic and imaginative qualities of her mind will find ample field for their natural and due development without great need of teachers; but certain correctives, or balances, are necessary to perfect and sane development. The state of mind implied by such statements as Helen made about Mathematics* showed not only her need of information, but a lack of appreciation of the limitations and conditions of civilized life.

It must not be inferred from what has been written that Helen objected to the study of Mathematics. Far from it. It would have

* Statement made in a letter of May 25th, 1898: "Somehow I cannot make myself care very much whether two and two make four or five, or whether two lines drawn from the extremities of the base of an isosceles triangle are equal or not. I cannot see that the knowledge of these facts makes life any sweeter or nobler."

been a deep mortification to her to acknowledge defeat. Her ambition and her confidence in her own power to master whatever she has once undertaken are two of her most marked traits of mind. Her desire to know Algebra was doubtless of a far different kind and intensity from that to learn how to speak when she began with Miss Fuller. But she was all eagerness to learn, and seemed, as far as I could judge, during the first few weeks all the more determined to succeed and all the more plucky in the fight, because others had been in despair. This had furnished me with another argument for persisting in the mathematical studies. Disappointment and chagrin at failure would, I believe, have had a worse effect on her health than the mere mental labor necessary to success. Successful toil is the fountain of health and sanity.

With these drawbacks and hardships, then, we worked from early February, 1898, till July, 1898. In May, Helen and I wrote for *The Silent Worker*, a periodical published at Trenton, N. J., devoted to the interests of the deaf, the following account of her studies:

MY DEAR MR. JENKINS:

I cannot write an article for the *Silent Worker*, but I will tell you as briefly as I can in a letter what I have been doing since I left the Cambridge School last December.

But, before I begin, let me assure you that I am perfectly well. I was not ill when my mother removed me from Mr. Gilman's school. Indeed, I have not been ill enough to have a physician for several years—not since I was quite a little girl.

My studies at present consist of Greek, Algebra, and Geometry. I pursue these studies under the guidance of an excellent tutor, Mr. Keith, assisted by Miss Sullivan. Mr. Keith comes out here once a week and teaches me for three hours. He explains what I did not understand in the previous lesson, assigns new work and takes the Greek exercises, which I have written during the week on my Greek typewriter, home with him, corrects them fully and clearly, and returns them to me. In this way my preparation for college has gone on uninterruptedly. I find it much easier and pleasanter to be taught by myself than to receive instruction in classes. There is no hurry, no confusion. My teacher has plenty of time to explain what I do not understand, so I get on faster and do better work than I ever did in school. I still find more difficulty in mastering problems in mathematics than I do in any other of my studies. But I am not discouraged. I am going to conquer them, and right soon, too!

In Greek I have practically finished the grammar, and am now reading the "Anabasis," and shall soon begin the "Iliad." I admire Greek very much indeed. It is easier to read than Latin, I think, and much more spontaneous and beautiful. I wish algebra and geometry were only half as easy for me as languages and literature! But somehow I cannot make myself care very much whether two and two make four or five, or whether two lines drawn from the extremities of the base of an isosceles triangle are equal or not. I cannot see that the knowledge of these facts makes life any sweeter or nobler!

On the other hand, each language I learn reveals a new world to me. If I sit down to study my "Æneid," new thoughts, new ideas, new aspirations flash out from the Latin words with almost the same vividness and freshness they did when the meaning of my own beautiful language first dawned upon my imprisoned soul.

Perhaps it may interest your readers to know that I spend as much time as possible in the open air. I take a little walk every morning before I begin work. It is my morning hymn, the key-note of my day. And most every pleasant day when my lessons are learned, I go wandering into the woods with a dear little friend in search of sheltered nooks, where wild flowers love to grow. Sometimes we follow a little brook through field and meadow, finding new treasures at every step, not only of flower and grass, but of thought and sweet experience also.

As to plans, I have but one, and that is to take my final examinations for college a year from now. Of course it is my fervent wish and earnest determination to pass them with credit for my teacher's sake as well as my own. Further than this I have not tried to look into the future; the present is so rich in all that makes life sweet and happy, I have no time for dreaming dreams or building air-castles.

Sincerely yours,

HELEN KELLER.

WRENTHAM, MASS., *May 25.*

Mr. WESTON JENKINS:

DEAR SIR: The foregoing letter from Miss Helen Keller must so far surpass in interest to your readers anything that I can write that I have hesitated about adding anything to it. Some details, however, may enhance the value of her general statement about her studies.

Miss Keller began work with me about four months ago. In Greek she already knew well the first and second declensions of nouns and adjectives and the indicative mood of verbs in *ω*; and had translated very simple short sentences from Greek into English and from English into Greek. During the four months of Greek under my direction, she has mastered with absolute precision all the varied forms of Attic Greek Inflection, including about 150 verbs, classified according to seeming irregularities, and all the intricacies of Greek Syntax needed for ease and rapidity of power of translation. She has perfect control of fifteen hundred common Greek words, which she knows not merely as isolated facts, but as organisms growing

from root or stem with significant suffixes and prefixes. In other words, she has systematically studied the principles of derivation and formation and affinity of words.

In doing this she has translated and written out for me with her type-writer about one thousand sentences, Greek into English, and six hundred sentences, English into Greek, many being long and intricate. She has translated about ten pages of simplified "Anabasis" and begun the "First Book of Xenophon's Anabasis." Her progress here will be very rapid, because her equipment is strong in accurate knowledge of forms, in clear appreciation of constructions and idioms, in ample and workable vocabulary, and in correct methods of study.

She takes delight in analyzing words, in tracing the development of their meanings, and in detecting their affinities. In translating she places the minimum dependence on the dictionary; for very often, by derivation or by inference from the context, she judges, within the limitations of the grammatical structure, the meaning of new words. Notes and helps in advance of her own strenuous efforts at interpretation, she spurns.

In a very short time she will be reading Homer with delight.

When I first inquired into Miss Keller's condition in Algebra, I found her preparation for doing that part of the subject with which she was then dealing altogether superficial. Accordingly I copied Socrates, and proceeded on the assumption that she knew nothing, to the end that she might know something. I aimed at giving her such mathematical conceptions, such accuracy in methods and such mental grasp as would improve her mind and bring some pleasure in the work. Especially I experimented to learn how far I could rely on her doing without raised type, how far she could carry in her mind algebraic language, and perform in her mind varied changes in algebraic processes. She has succeeded marvellously. Long and involved changes and combinations she handles with accuracy and ease.

The following example she did yesterday mentally, without external help, after it was communicated to her by manual alphabet:

$$\frac{a-b}{x(a-b)} - \frac{a-b}{y(a+b)} + \frac{(a-b)(x+y)}{xy(a+b)}$$

In this example the mind had to retain its grasp of the terms, as it was performing, in proper succession, seven or eight steps; then, taking up eight new-found terms, had to combine them in pairs, factor the result, and then cancel between numerator and denominator.

In four months more, I am confident, she could, with lessons only once a week, master the whole of those parts of Algebra required for admission to Harvard College. Already the foundations have been laid and enough of the superstructure raised to assure the harmonious and perfect completion of the work.

In Geometry it seemed to me necessary not only to begin anew, but even to undo. Starting with very elementary concepts about space, points, lines, angles,

etc., we have traversed carefully the matter usually contained in the first book of Plane Geometry, together with many "originals." I have forbidden the doing of any proposition by memorizing what has been told her. She has been taught to work out originally everything possible. For instance, all the theorems about quadrilaterals were reasoned out carefully by her in my presence, her previous reading having been only the necessary definitions.

Although her Geometry has given us more trouble than any other subject, she has shown herself able to do the work in the proper methods and spirit. And I have no doubt that before long she will revise her estimate of the value of mathematical studies.

Truly yours,

MERTON S. KEITH.

46 Irving street, Cambridge, Mass.

Now compare these statements about Helen's proficiency in Algebra and her estimate of Mathematics written at the same time. She evidently had not yet seen much beauty, or good of any kind, in Arithmetic, which she had studied in the Cambridge School, or in the Algebra. Much lower was her estimate of Geometry. Yet she could then do mentally, without hint from me, after I had twice read them to her, examples such as these :

$$(1) \quad a^2 - [b - 2a^2 - \{3c^2 + 4b - (3a^2 - 2b + c^2)\}]$$

$$(2) \quad \frac{x}{x^3 + y^3} - \frac{y}{x^3 - y^3} + \frac{x^3y + xy^3}{x^6 - y^6}$$

$$(3) \quad \frac{\frac{1}{a - \frac{a^2 - 1}{a + \frac{1}{a - 1}}}}{a - \frac{a^2 - 1}{a + \frac{1}{a - 1}}}$$

Indeed, the first example is like those she did in the way described at the third lesson we had. The others she did in like manner within three months after we began.

I had found her mental condition in Algebra very much confused. She was then working on simultaneous equations, and yet I found her unable accurately or understandingly to work simple equations

of one unknown quantity ; even transposition of terms was for her a stumbling-block. She had hardly any knowledge of factoring, or of fractions. Least Common Multiple and Greatest Common Factor were practically impossibilities for her. She had had no drill by means of the Braille type-writer in doing even rather simple examples in long division, or in multiplication. She was very inaccurate in addition and subtraction. This condition of things was discovered at the first talk I had with her. The text-book was changed, and I began the subject as if she knew nothing of it. Of course, she had some ideas about the meaning of the negative sign, although even here I found it necessary to discuss the subject thoroughly, that her knowledge might be more than merely mechanical. Indeed, we discussed together carefully and with many practical illustrations the nature and use and value of Algebra in general compared with Arithmetic. In our second lesson we took up simple examples like No. 1. I set out to discover how far I could rely on her eager attention, tenacity of mental grasp, and memory to save her the time and weariness of paper work. I was delighted to find her able, after some practice, not only to carry in her mind the example with its complications of letters and coefficients and exponents and various signs, but to perform mentally the operations through to the solution. And from that day on she has ever been taught to rely on the Braille, the raised points punctured in paper, only in cases of very great complexity, or when she is anxious to avoid every chance of error in examination. Not only in removing brackets, but in factoring, in multiplying binominals, and raising binominals to powers, and in much of division she has used no Braille. In this way much time was saved, and very thorough, permanent impressions were made upon her mind. We had a long tussle over long division and Greatest Common Divisor by long division, chiefly because of the difficulty of producing the work in Braille, and arranging the work within the limits of the sheets of paper. But we succeeded in

devising short cuts even there, and after four or five lessons devoted to these topics she became quite expert. Now she is so sharp at factoring that she often surprises me with the little written work used in arriving at the answer.

By July, 1898, she was ready for examination in Algebra except in the following parts: Quadratic Equations, Surds, Ratio and Proportion, and part of the Theory of Indices. Resuming work in October she mastered the theory and method of solving Quadratic Equations by applying the factoring method first, as in the example $(x - a)(x - b) = 0$, and never resorting to the methods of completing the square, unless the task of factoring was very difficult or impossible. Being taught how we obtain, from the equation

$$ax^2 + bx + c = 0, x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a},$$

it was remarkable how soon she became expert in solving all numerical quadratics, and how quickly she could tell whether the values of x were exact or surd. But in literal quadratics we had something of a tussle. For here again she had to resort much to the Braille in the more complex examples, and errors crept in very often. But, after a time, here again she became accurate and rapid in her work.

In the Theory of Exponents and in Surds and Ratio and Proportion she had no great difficulties. In examples containing fractional and odd exponents she was rather subject to error, apparently on account of the mechanical troubles in recording her work.

And of what use to her has the Algebra been? Is it simply that her ambition has been gratified? or that she has experienced the exhilarating joy springing from successful effort? This fruition of work she has indeed had during the last three quarters of the time devoted to Algebra; and, more, she has taken delight in the work for itself. She has done it not as a mere task. Clearness and definiteness have been added to many a mental picture once obscurely outlined, or dimly colored. Her mental vision has been sharpened to

discern relations unseen before. She has seen order and simplicity and neatness and rigid exactitude issue from confusion and complexity. She has acquired new qualities of mind, or at least developed or strengthened latent ones. She has seen new beauty and heard new harmony.

In Geometry I found that about one-half of Book I had been studied and repeatedly reviewed since the previous October. But Miss Sullivan's laments over Helen's frequent failures with propositions reviewed many, many times showed that either our task was impossible, or the methods must be changed. Here too, as in the case of the Algebra, the subject was taken up anew, as if she had never studied it. I talked with her about the simplest elements of Geometry; such as points, lines, angles, surfaces. By means of the cushion and the wires with bent and pointed ends, I gave her much tactical practice in judging position, distance, direction, parallelism, angular quantities, etc. I found her defective here, and constantly in need of patient and persistent practice. Her judgment of position, size, and form in Geometry seemed poor. Her imagination in geometric fundamentals needed stimulation. I found, too, that many misconceptions stood in the way of her getting right ones, and had to be detected and removed.

Accordingly, I was so careful about methods of statement and of proof, that for the first two or three months I did not allow her to take any new steps except under my immediate direction. She studied between recitations only in review of what I had done with her. Propositions which she had studied with others, but which I had not yet done with her, I tried to have her forget, and go over with me afresh, while I led her along by question and hint, to the end that she might get some insight into the meaning of the subject, and especially into the method and logic of it. Every proposition wholly new to her was done originally. The first statement of it she had ever heard was from me. She repeated the proposition until she

stated it correctly, and then she drew the figure on the cushion. If this was correct, she lettered it and stated algebraically the hypothesis and conclusion. She was then asked to analyze the requirements of the conclusion and the facts given in the hypothesis, to find relations between them suggesting the proof, or suggesting facts already proved leading to the proof. If this analysis suggested new construction, she drew it and lettered it, and renewed her analysis. Of course, there is no originality in this method. All good teachers of Geometry follow this method except where synthesis may lead more directly to proof. I simply had to be more careful and patient with Helen at first than would be necessary in teaching her other subjects; and this, either because her intuitive powers were weak here, or her mind had been confused and misdirected in her previous study of the subject. I am very sure that both reasons are necessary to an explanation of her early difficulties. The second reason I am positive holds. For she certainly had somehow got the notion that memorizing the proofs of others was the chief secret in Geometry. She seemed bewildered in a mass of words and disconnected ideas of no value or interest, and not even of much meaning. To tell her the method of work, to show her how to help herself to the use of facts or ideas already familiar and admitted to be true, in order to come at new truths not before acknowledged, was the real task. To get one proposition proved by herself in the proper way, even if it required days of teaching and study, was worth more than her ability to rehearse another's proofs of a hundred propositions.

One very important pedagogic principle, familiar to all teachers, but very often disregarded, has been deeply impressed upon my mind in my experience in teaching Miss Keller. Apparent stupidity (not habitual) on the part of a pupil is much more often due to wrong preconceptions than is commonly realized. Reiteration of the proper view in all possible variation of language is of no avail as long as the wrong impression is present in the pupil's mind. During the first

few months of our work together, there were occasions when Helen's mind seemed impervious to statements which seemed to me absolutely clear and simple, about facts or ideas equally simple. Work came to a standstill, or got into a tangle. She seemed obstinately stupid. When the trouble was over, it was always discovered that a misconception had thwarted our efforts. By questionings, by asking her freely to give her ideas on the subject in hand, or by going back to the primal elements underlying it, I always succeeded in finding the false notion. Sometimes I had been at fault in some ambiguous or inaccurate form of statement, sometimes her own imagination had distorted the facts by some strange association of ideas; sometimes it was hard to see the cause. But with the wrong idea removed, the right one usually came to her like a flash of light. By care and deliberation in the method of presenting a subject, and above all, in the choice or order of words, cases of misunderstanding became very few. During the last part of our work together the rapidity and smoothness of the progress of instruction were remarkable.

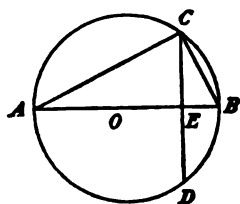
Doubtless with Miss Keller, more than with the seeing and hearing pupil, it is incumbent on the teacher to convey the correct impression first. With her avidity for knowledge, vividness of imagination, rapid and complex association of ideas, and her tenacity of mental grasp, the first impression is very strong and persistent. To correct or remove it and replace it by another is difficult, chiefly for these reasons. One of the most remarkable facts about her seems to me to be that she so rarely gets first impressions wrong, and arrives at conceptions which are on the whole so sane and perfect.

By July 1, 1898, we had finished Book I in Geometry, with about fifty "originals," and made a beginning on Book II. From October 15, 1898, to February 1, 1899, we finished the Geometry, with frequent reviews and many originals. In doing the latter Books she had the use of a book of raised letters and figures, which rendered her progress more rapid. But it would have been unwise to use it

from the beginning, or to use it in all the propositions of the later Books.

It must be noted that Miss Keller labored under much greater disadvantages in Geometry than in Algebra, or in any other subject. For she used no Braille to record her own work, having only a figure, constructed often with much trouble, to refer to. She had to carry in her mind the lettering of the figures, the hypothesis and conclusion, the construction, and the process of proof. To keep the mind clear under such conditions is very hard. After seeing through the proof, perhaps by many trials, she had to record the results by her typewriter for the examiner. This in itself is a great task to do accurately, as was often shown by misprints, or mistakes about the naming of lines, or by the omissions of steps in proof which had been really in her mind. All these things required patient practice, and consumed much time. To give her practice with economy of time, we sometimes did theorems wholly in the mind, even the figures with the lettering being only mentally pictured. We were very successful here. I give one instance of a problem thus solved by her correctly in about five minutes.

Problem : The diameter of a circle is 20 inches. Through a point in the diameter four inches from one end a chord is drawn perpendicular to the diameter. What is the length of the chord? and what are the lengths of the chords drawn from the ends of this chord to the ends of the diameter?



$$CE = \sqrt{(AE \times EB)} = \sqrt{16 \times 4} = 8$$

$$\therefore CD = 16 \text{ Ans. (1)}$$

$$AC = \sqrt{(AB \times AE)} = \sqrt{20 \times 16} = 8\sqrt{5} \text{ Ans.}$$

$$CB = \sqrt{(AB \times EB)} = \sqrt{20 \times 4} = 4\sqrt{5} \text{ Ans.}$$

From February 1, 1899, till June 1 Miss Keller did about fifty examination papers in Geometry, consisting of review book-work and

originals; and also, about twenty Harvard Admission Examination Papers. These were almost wholly written out for me to examine, and were carefully reviewed and discussed. During June I did very little work with her in Algebra and Geometry, but kept her occupied with originals. Most of this she did so well that I needed but little time with her.

Miss Keller had had something more than two months' Greek when I began my work with her in February, 1898. My article of May, 1898, quoted already, describes the early stages of the work. In five months we had practically completed a very full course in etymology and syntax in a very thorough manner, and applied it all in the translation of Greek into English, and English into Greek. She had by July, 1898, translated nearly two Books of the Anabasis, mostly by herself, as I had had but very little time to hear her recite much connected narrative, perhaps not more than twenty pages. During the summer vacation of 1898 she finished two more Books of the Anabasis by herself. She had the first Four Books in Braille.

From October 15, 1898, till July, 1899, she read many selections from Xenophon's works (the later books of the Anabasis, the Hellenica, the Cyropedia, Agesilaus, and the Symposium) and from Arrian and Thucydides. These passages were often made the basis of written examinations, in which she was not allowed the use of dictionary or grammar. At other times I translated to her passages which she had had trouble with. These were used as a means of teaching her new facts or principles of the language, or facts and principles of especial difficulty, or not at the time familiar enough to her, or to illustrate methods of study, or to give practice in translating the same passage closely into many forms of idiomatic English.

The amount of Greek Prose, however, which Helen has read is not great; not as much as my pupils usually read; but it has been very varied in style, and representing many phases of life and manners. It was difficult to find time to read more, with the Homer

and Cicero and Virgil and Geometry demanding so much time. Geometry, even in the later months, kept absorbing more time than any other one subject. Homer and Cicero were only begun late in October, 1898, and there were at that time still eight Books of Virgil which I wished her to read.

Homer has from the first been a paradise to Miss Keller. After two or three preliminary talks on some of the most common peculiarities of Homeric Greek as distinguished from Attic, and some study of the history of the poems, with a little of the theories in the so-called Homeric Question, we plunged boldly into the Iliad itself. Her mind and fancy were allowed to range at will along that Trojan strand, where Chryses' prayers mingled with the sighs of ocean, and Achilles' petitioning cry reached the ears of his Nereid mother; the master hand of the greatest poet depicted upon her brain scenes of passion and strife and pity and love among gods and men—scenes never before or since painted so simply and faithfully and vividly. Mentally she saw the sights and heard the sounds of those ancient days, as the blind bard had seen and heard them in the sky above and on the earth and sea.

In all her language study, I have allowed her to read thus by herself—much as she would read English, and without minute analysis, or attention to details of construction and grammar. Of course, we lingered here and there on some passage of surpassing beauty, or power, or truth, but the pity of it seemed to be that the teacher's instinct and duty made me devote some time to the drudgery of etymology and syntax. For instance, 100 lines in Book I were ransacked for illustrations of Homeric forms and constructions, and for drill in derivation and scanning. And now and then, at later stages in the study of Homer, minute consideration was given to the mere mechanism of the language. All this was of course necessary for Helen as well as for any other pupil, as she is much in the habit of getting at the meaning of passages of foreign languages by intui-

tive insight, or by impulsive grasp, needing often the correction of grammatical literalness. This need has, however, not been seen so much in Greek as in Latin. For in her thirteen months' study of Greek with me she had, from the first, been trained to great precision and care in her examination of words and sentences. She became very skilful in her power of analysis of the word or phrase, and expert in inferring the meaning from derivation and construction in connection with the context. Her power of minute analysis had been carefully trained, and she seemed less inclined in Greek than in Latin toward premature inference of meaning without due attention to form of word and to grammar. In Latin I have found her much more likely to get a translation utterly wrong without her suspecting it, simply because she had neglected word-formation and syntax, and trusted only to the meanings of the words, all of which she knew. I think, too, it has been much more usual for her to get good idiomatic English in the translation of Greek than in the translation of Latin. This is probably partly due to the natures of the languages, to the comparative simplicity and clearness of thought and expression in the Greek prose and in the Homer, while in Cicero and in Virgil there are greater complexity and subtlety. But I believe her comparative difficulties at first in learning Cicero were also due to a weaker power and habit of analysis of word and sentence. This power and habit she strengthened to a high degree finally, but only by considerable patience and prodding.

To return to the Homer. Helen read in all about six Books of the Iliad and Book I of the Odyssey. The Iliad Books were I-III, IX, XVI, and parts of the later Books. Books I-III and IX were in Braille, facilitating the work. I had, early in 1898, made out a list of the Books of the Iliad and Odyssey which I wished her to have in Braille, but there seemed to be some misunderstanding and much delay, so that we never received one-half of what we wanted. Book XVI and the later books were therefore read under difficulties and slowly.

Helen did no work with me in Latin until late in October, 1898. We then began Cicero. She had in Braille the four Catiline Orations, the Manilian Law and Archias. These she read entire, as so much literature, and as rapidly and freely as she wished. She read thus two Catiline Orations before I cross-questioned her much on the text and tested her translations, to learn her defects and needs. Then we went over the Third Catiline Oration together carefully, with minute attention to grammar, analysis of word and sentence, rhetorical order of words, style, logic, etc.

Helen also read by the manual alphabet selections from many of Cicero's works,—chiefly political speeches, but some philosophical passages. We read during the last three months the best parts of Pro P. Sestio, De Provinciis Consularibus, and In L. Calpurnium Pisonem. These selections and parts of Orations were carefully reviewed in recitations, with a view to giving her the kind of drill I had found she needed. The passages selected were usually hard, of varied styles and subject-matter; and she often had considerable trouble with them at first. Indeed, I was often rather surprised at the perversity of meaning, or the poor English resulting from her work. For every one knows Helen's skill in English. The nature of the difficulties and the reasons for them I have somewhat discussed already. I had especial trouble in teaching her analysis of words. In Latin she seemed to look upon a compound or derived word as an entity, or at least to lack the habit of picking the word to pieces and seeing the probable meaning by derivation. She eventually acquired the habit, but it took longer than I thought it ought to take with one possessed of her remarkable memory.

Her translations in Latin were rarely bad from being too literal, but generally from being too free without giving the sense, or giving it imperfectly. She had to learn to translate literally, or rather see the meaning without translation in the Latin order, as a Roman would have seen it. After several perusals of a passage in that man-

ner, she was taught to turn it into good English. Thus she learned the Latin idiom, and dropping it from consciousness but holding to the idea, sought an English idiom for the expression of that idea. Of course these processes are not easy. The learning of Latin idioms is difficult enough; to see the real meaning of the Latin idiom when its literal translation seems nonsense is hard enough; but to drop the mould in which the thought has once been cast and find a new and appropriate English mould is often harder still. In short, the art of good translation is far more difficult than even many good and experienced teachers of language realize.

Again, the subject-matter of Cicero's harder passages, the political, constitutional, legal, and social questions involved in them, the rhetoric and logic, and the consequent peculiarities of phraseology, order and style, present to most pupils hard problems, compared with the usually simple narrative of Cæsar or Nepos. Miss Keller in particular must have found much in Cicero foreign to her experience, and hard to comprehend.

But she overcame all difficulties. She has attained the facility of understanding Cicero and translating him into idiomatic English that brings to its possessor delight. She appreciates and admires the brilliancy of Cicero's eloquence, the copiousness of his diction, the vehemence of his invective and satire, the subtlety of his irony, the lofty grandeur of his moral sentiments, and the nobility and wisdom of much of his political philosophy. She has, too, noted his defects—his vanity, his habit of loquacious self-praise, the foulness of his scurrility, and the specious or disingenuous quality of many of his arguments.

In Virgil, Miss Keller has been her own teacher more than in any other subject. I have read with her only 500 or 600 lines (these, however, very carefully and slowly), while she has read about 10,000 lines—the whole of the *Æneid* and a little from the *Eclogues*. It seems easy and natural for her to see the meaning and appreciate

the inner feeling of the great Roman poet. She had read about three Books before October, 1898, and she read in the following six or seven months six Books more, leaving for very rapid reading, during May and June, 1899, Books X, XI, and XII. Her translations to me were at first too free, and often inaccurate, but later they became close and exact, idiomatic and rhythmical. The diction became highly poetic, both in choice and order of words and phrases, and in structure of sentences. I believe Miss Keller is capable of giving the world, at some future time, in rhythmical prose, a new version of Virgil, which would possess high and peculiar merit.

To sum up, Miss Keller was fitted to pass the Radcliffe Examinations in Elementary Algebra and Plane Geometry in thirteen months; in Elementary Greek Prose, omitting the two months spent in it before she began work with me, in thirteen months; in the last nine Books of Virgil in about eight months; in Cicero in eight months; in Homer in eight months. Doubtless in all of these subjects she could have passed good examinations even had they been taken considerably earlier—the Algebra and Greek Prose three months, and the others one or two months earlier.

The requirements for admission to Radcliffe College are identical with those for admission to Harvard College; the examinations are identical, and take place at the same hours. The examinations in the Languages mostly consist in translation at sight; that is, care is taken to present to the candidate passages unlikely to have been seen before. Much stress is laid on the use of good, idiomatic English in the translations, which, however, must be close. Questions based on the passages set for translation and relating to grammar and the subject-matter form the rest of the examination. In Plane Geometry usually rather more than half the paper is intended to be sight, or original, work, the rest being the book-work of the common text-books. In Algebra, also, the intent of the examiners seems to be to test the originality and the ingenuity, as well as the knowledge and accuracy and readiness, of the candidate.

The examinations were to come on the last two days of June. During the months of preparation we had never provided for any other method of examination than that to which she had always been accustomed—communication of the contents of examination papers by the manual alphabet, as used by her "Teacher," Miss Sullivan. Mr. Gilman had performed that service in the preliminary examinations two years before, in the manner described by him. But it was thought best to render it impossible that any doubt as to the genuineness and fairness of the examinations should ever arise in the mind of the most sceptical critic. And although it seemed to me that no one ought ever to cavil at an examination which had been conducted with Miss Sullivan as interpreter, or reader, of the papers, it was agreed on both sides that some one should be found who could reproduce the papers in the raised characters used by the blind and known as Braille—some one who had had no educational, or even personal, relations with Helen and whom she had never known. Such a person was found in Mr. Eugene C. Vining, of the Perkins Institute for the Blind, South Boston.

Mr. Vining met Helen for the first time a few minutes before the hour for the first examination—that in Elementary Greek. It had been arranged that he should send to Helen a few days previously for her inspection sample Radcliffe Examination Papers, transcribed by him in Braille, to make sure that there should be no hitch. It was fortunate that this provision had been made, as will be seen on reading the following account which Helen herself has given of the examinations:

HOW I PASSED MY ENTRANCE EXAMINATIONS FOR RADCLIFFE COLLEGE.

On the 29th and 30th of June, 1899, I took my examinations for Radcliffe College. The first day I had Elementary Greek and Advanced Latin, and the second day Geometry, Algebra, and Advanced Greek.

The college authorities objected to Miss Sullivan's reading the examination papers to me; so Mr. Eugene C. Vining, one of the instructors at the Perkins

Institution for the Blind, was employed to copy the papers for me in American Braille. Mr. Vining was a perfect stranger to me, and could not communicate with me, except by writing Braille. The Proctor also was a stranger, and did not attempt to communicate with me in any way.

However, the Braille worked well enough in the languages, but when it came to Geometry and Algebra it was different. I was sorely perplexed, and felt quite discouraged, and wasted much precious time, especially in Algebra. It is true that I am perfectly familiar with all literary Braille—English, American, and New York Point; but the method of writing the various signs or symbols (used in Geometry and Algebra) in the three systems is very different, and I had used only the English method in my Algebra work.

Two days before the examinations Mr. Vining sent me a Braille copy of one of the previous examination papers in Algebra; but, to my dismay, I found that it was in the American notation. I sat down immediately, and wrote to Mr. Vining, asking him to explain some of the signs. I received another paper and a table of signs by return mail, and I went to work to learn the notation. However, on the night before the Algebra examination, when I was struggling over some very complicated examples, I could not tell the combinations of bracket, brace, and radicals. Both Mr. Keith and I were distressed and full of forebodings for the morrow; but we went over to the College, a little before the examinations began, and had Mr. Vining explain more fully the method of writing such examples.

In Geometry my chief difficulty was that I had always been accustomed to reading the propositions in Line Print or having them spelled into my hand; and somehow, although the propositions were right before me, yet the Braille confused me, and I could not fix in my mind clearly what I was reading. But when I took up Algebra I had a harder time still. I was terribly handicapped by my imperfect knowledge of the notation. The signs, which I had so lately learned, and which I thought I knew perfectly, confused me. Consequently my work was painfully slow, and I was obliged to read the examples over and over before I could form a clear idea what I was required to do. Indeed, I am not sure now that I read all the signs correctly, especially as I was much distressed, and found it very hard to keep my wits about me.

But I do not blame any one. They did not realize how difficult they were making the examinations for me, nor did they understand the peculiar difficulties which I had to surmount. But if they unintentionally placed obstacles in my way, I have the consolation of knowing that I overcame them all.

HELEN KELLER.

To this story of struggle and victory I wish to add here only a few words by way of explanation. In regard to the time allowance, Helen exceeded the limits only in the Mathematics. Here it had

been agreed that because of the mechanical difficulties in recording the results of her work for the examiner, she should be allowed extensions of time. In doing and writing out Algebra papers for me, she had, at first, taken sometimes three hours, or more; but she had by practice usually completed them well within the time limit of one and one-half hours. So it had been also with Geometry. Still in these subjects it was not surprising that so much time was consumed in the Radcliffe examinations. As I have explained already, it is very easy to make mistakes in this recording of work; and Helen explains the slowness partly by the fact of her being very careful to make no slips.

The examinations were over. The evening following was spent in some little discussion of the events of the day, but also with jovial diversion. Helen seemed bright and fresh. The next morning, at the breakfast table, on my jokingly asking her if she would like to try the examination that forenoon in Greek Prose Composition, she was all eagerness to try. A shadow of disappointment came over her face when I told her I had no intention of having her try.

On her return to Wrentham that day her mother remarked her freedom from nervousness and fatigue. Indeed, Mrs. Keller has since assured me that she had never seen Helen in as good health as just before and just after the examinations. Certain signs of nervousness which had for years been almost habitual with her had disappeared.

It was at first with some degree of disappointment to Helen that the results of the examinations were received. For she was only told that she had passed in every subject and with credit in Advanced Latin. The ambitious soul had aspired to approximate perfection in most of the subjects. In a letter to me on July 11 announcing the results, she expressed her feelings in these words:

"I was bitterly disappointed not to have done better, and my disappointment often throws a shadow upon the pleasure which this summer is bringing me; but, dear Mr. Keith, I did my best, and I hope that in the future I may find a far better

medium through which to show you my gratitude, and appreciation of what you have done for me."

It was a pity that the examinations happened to afford no better test of Miss Keller's real proficiency in Greek and Mathematics. It is a wonder that the Latin examination did give something like such a test. With the novelties of the American Braille and the strange isolation in which she worked and the various incitements to nervousness to which she was exposed, the results seem wonderful. Could she have done her work under the conditions habitual with her, higher marks would have been won, but the achievement would have been really no greater.

Soon after each examination in Latin and Greek she gave me orally from memory her version of the text. This she did wholly without reference to the paper which I held in my hand to follow her. Only once or twice in each case did she hesitate, as if in doubt as to what came next; and never did she fail in her remembrance of the text, or of her translation.

As to any helps to the theory or practice of teaching to be gained from the education of Miss Keller, the observant reader may have noted a few in the detailed account already made. Perhaps no absolutely new truths can be seen there; but certainly many a good old principle has been proved correct and a few doubtful ones made clearer. Her case is a new illustration of the fact that a good memory is at least a concomitant of high intelligence; but her education is also a proof that memory may be too much relied upon. While memory must be the ever ready and alert servant of the other powers of mind, it should be kept their servant. The stronger the memory the greater the danger of relying upon it too much. The powers of analysis, of comparison, judgment, and reasoning, and even of imagination, must be aroused and employed, or the materials furnished by experience and memory remain or become a meaningless mass or chaos. I do not mean to imply that Miss Keller's mind ever was in this condition, or in danger of being so; but I do mean that

in the teaching of many subjects, especially of a high order, one must make constant appeals to first principles, constant appeals to all the faculties of mind, rather than rely on the mere memory of processes and results. The inner meaning of things, their logical relations, even imaginative views of them, must be gained.

But exact and careful training of memory, through eager interest and attention, is indispensable. Every device possible in aid of memory should be used. And the cultivation of the other faculties of mind should aid the memory, as well as the memory aid them. Effort has a reflex action. For instance, it is certain that Miss Keller's pronouncing Greek words accurately helps her remember or recognize them. She often talks to herself while studying. The physical effort of the vocal organs reacts on the brain. For instance, while translating for me at sight a passage of Greek prose, she came across some Doric Greek: "ἀπορίομεν τί χρεὴ δρῶν." Two words, *τί* and *χρεὴ*, are also common Attic words; the first in Attic would be ἀποροῦμεν and the last would be δρῶν. The last, also, at that time, she probably had but very rarely seen in her reading. She could not at first translate. The context did not help much. I waited quite a while. Then I asked her to pronounce the sentence carefully. She had hardly finished the pronouncing when the translation came.

Helen's memory has thus far in her education seemed her most remarkable gift. But her power of inference is also remarkable. Her memory can be so fully trusted, while the habit and power of inference are so often freakish, that the teacher naturally relies more on the former. I think I have partially shown where and when the latter power is dangerous, and why it needs training to secure accuracy. Association of ideas and liveliness of fancy are necessary, but need curbs and guidance. A broadened basis of related facts, a power of comparison and analysis, a habit of logical thinking are requisite.

It is in these higher powers of mind that Miss Keller has developed greatly during the last year. It is no longer her prodigious memory only that astounds me. Calmness and patience in collecting,

examining, and comparing all the obtainable facts before making impulsive inference, repeated reconsideration of facts, and revision of judgment, sustained and logical thought combined with free flights of fancy—these are the powers and qualities of mind that most command my admiration.

But with all her innate and acquired powers of mind she could not have attained her present eminence, had it not been for the moral, or quasi-moral, qualities of her soul. Ambition, undaunted courage, defiance of or glorying over obstacles, obstinate refusal to admit defeat, hope rising from incipient despair, self-respect and self-trust, patience and faith in planning or working or waiting for the consummation of effort—these constitute her armor of victory.

It is idle to inquire whether Miss Keller's achievements are due to innate abilities or qualities, or to expert teaching. There has been some discussion on this point, but it seems to me fruitless. Of course both good teaching and good natural abilities are essential. In the cases of some remarkable men and women nature seems to have been the dominant factor, so much so that greatness seemed to come in spite of environment, or with lack of what we technically call education. But if all education is merely an unfolding, or evolution, it may take superhuman discernment to detect all the factors acting and reacting on each other. Much that seems unfavorable may be stimulative; much that seems favorable may be stupefactive. In cases like Miss Keller's it seems to me that good teaching and proper environment are even more necessary than in the case of the common student. More pitfalls have been in her way, and careful guidance has often been absolutely necessary.

Great as have been her achievements, equal results are, I believe, within the reach of many others. The merely intellectual qualities needed are not rare; it is their combination with moral powers that produces the seemingly magic results. Ambition stimulated by obstacles, persistent will and patience explain many of the wonders of Helen Keller's achievements.

M. S. Keith

WRENTHAM, MASS., *September 17, 1899.*

Mr. JOHN HITZ,

*Superintendent of the Volta Bureau,
Washington, D. C.*

MY DEAR MR. HITZ: It is with the greatest reluctance that I comply with your request to write an account of my education since 1892. I cannot believe that what I shall have to say on the subject will have any interest or value from an educational point of view; but, since you seem so desirous that I should make the attempt, I will do my best to please you.

I cannot give a connected account of my studies between March, 1892, and October, 1893; they were constantly interrupted by travel, and by visits to Washington, Niagara Falls, and the World's Fair. But I studied more or less by myself in a desultory manner. I read the histories of Greece, Rome, and the United States, and acquired a sufficient knowledge of French to read with pleasure Fontaine's fables and passages from "Le Miser" and "Athalie." I also gave considerable time to the improvement of my speech. I would read aloud to Miss Sullivan, or recite long passages from my favorite poets, which I had committed to memory, and she would correct my pronunciation and help me to phrase and inflect properly.

It was not until October, 1893, after I had recovered from the excitement and fatigue of my visit to the World's Fair, that I began to study regularly. Miss Sullivan and I were then visiting friends in Hulton, Pennsylvania. It happened that a neighbor of my friends, a Presbyterian minister, was a good Latin scholar; so it was arranged that I should study Latin with him. Mr. Irons proved to be a very good teacher. He taught me Latin grammar principally; but he often helped me in Arithmetic, which at that time I found very troublesome. He also read Tennyson's "In Memoriam" with me.

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HELEN A. KELLER AND MISS SULLIVAN.

(1898)

MARSHALL, PHOTOGRAPHER BOSTON, MASS





I had just begun Cæsar's "Commentaries" in Latin, when I returned to my home in Alabama, the latter part of February, 1894.

Perhaps I had better add that Mr. Irons did not communicate with me directly. Miss Sullivan always sat beside me, and spelled into my hand whatever he wished to say. Of course, it was she that looked up words and references for me, and talked over everything with me, just as if she had been a little girl like myself.

In October, 1894, I went to the Wright-Humason School for the Deaf in New York City, to receive special instruction in lip-reading and vocal training, Miss Sullivan accompanying me, and I remained there two years. My progress in lip-reading and speech was not what my teachers and I expected and hoped it would be. It was my ambition to speak like other people, and my teachers believed that this could be accomplished; but, although we worked hard and faithfully, yet we did not quite reach our goal. I suppose we aimed too high, and disappointment was therefore inevitable.*

* NOTE.—For the benefit of teachers, the editor, in further elucidation, here appends a brief article of Dr. T. A. Humason on the subject of Miss Keller's instruction, which appeared in No. 50, Vol. V, of the Educator.

The methods we have employed in teaching lip-reading have been too varied to give in detail. Suffice it to say that we have given almost no attention to elements, and very little to words, but have exerted our efforts mainly in giving systematic practice in reading connected language, spoken naturally. In pursuing this course we have given our chief attention where it was most needed; for, from the time Helen came to our school, she has experienced no difficulty in grasping isolated elements, very little in dealing with isolated words, but very great difficulty in understanding connected language. Our success has been such, however, that we have been able gradually to restrict communication by means of the manual alphabet, until now all communication between Helen and the other members of our family is carried on by means of speech. It would be far too much to say that all obstacles have been surmounted, for at times communication is slow and difficult. We are, however, able to notice such improvement as leads us to believe that in time Helen's lip-reading will prove a complete success.

In dealing with Helen's speech, while we have given some attention to articulation, we have especially endeavored to correct her faults of tone-formation, to render her voice pure and clear, and to give it flexibility. To this end we have made use of methods very similar to those employed by vocalists for the purpose of voice development. So much, in fact, have some of our exercises resembled those of the singer that Helen has come to speak of such lessons as "singing lessons." It must, however, be distinctly understood that these lessons have not been given for the purpose of teaching Helen to sing, but simply to enable her to discriminate differences of pitch in her own voice or in the voices of others, to give her control of her voice, and to make it pure in quality.

And, right here, I should like to correct an error, which has somehow crept into print, namely, that I learned to speak the English language perfectly in ten lessons—that is, in about ten hours. I did learn the elements of speech in that time, and my teacher and Miss Fuller could understand me pretty well; but I doubt very much if persons who were not familiar with the imperfect speech of the deaf could understand one word in a hundred. Indeed, it was many months before even my nearest friends could readily understand all that I said. Let no one imagine that I found it an easy task to speak well. On the contrary, nothing that I have ever accomplished has cost me more dearly in time and effort; and whatever facility I have acquired in speech has been gained only by hard and constant practice, and by Miss Sullivan's unfailing watchfulness. Even now, not a day passes that she does not call my attention to a mispronounced or wrongly inflected word.

Beside lip-reading and vocal training, I studied Arithmetic, Physical Geography, French, and German while in New York. I think I accomplished more in German than in anything else. My teacher, Miss Olive L. Reamy, could use the manual alphabet freely, and, as soon as I had acquired a small vocabulary, we talked together in German whenever we had an opportunity; and I recommend this method of learning a language as the easiest and pleasantest method I know anything about. Why, in a few months I could understand almost anything which Miss Reamy said to me about ordinary things,

So remarkable have been Helen's attainments in this line, and so delicate has her sense of touch proved, that she is now able to distinguish differences of pitch, in musical instruments or in the voice, as small as a half-tone; and what is still more wonderful, she can, by placing her hand on the throat of a singer, determine the pitch of the tone he is singing and can produce a tone of the same pitch with her own voice. By means of this marvellous faculty we have been able to give her such a knowledge of scale intervals that, should any one be disposed to make the attempt, she could readily be taught to sing a simple melody with considerable degree of accuracy.

The effect of this work upon her voice is much as we expected; the average pitch is higher than it was six months ago, the flexibility is much increased, and the quality is improved. We have held before us a high ideal—the ideal expressed in Helen's journal, that she might be enabled "to speak as other people do;" and in the light of what she has already accomplished we believe that it is possible, in time, to bring about the realization of this high ideal.

and before the end of the year I had read with real pleasure Schiller's beautiful "Wilhelm Tell." But I did not do so well in French. Madame Olivier, who taught me that language, was a charming Frenchwoman, and a fine teacher; but she did not know the manual alphabet, consequently my progress was much slower than in German, and I did not find the language nearly so interesting. However, I managed to read Molière's play, "Le Médecin Malgré Lui." I found it very amusing; but I did not like it half as well as I did "Wilhelm Tell."

In October, 1896, I entered the Arthur Gilman School for Young Ladies, in Cambridge, Mass., with the purpose of fitting myself for Radcliffe College. My studies for the first year were Arithmetic, Latin, German, English History, and English Literature. In Latin I reviewed my grammar and read several chapters of Cæsar's "Commentaries." I had also Latin composition three or four times a week. In German, partly with my fingers, and partly with Miss Sullivan's assistance, I read "Wilhelm Tell" again more carefully, and two of Schiller's poems, "Die Glocke" and "Der Taucher," Lessing's "Minna von Barnhelm," Kriehl's "Der Fluch der Schönheit," Freytag's "Aus dem Staats Friedrichs des Grossen," and Goethe's "Aus meinem Leben." I finished Arithmetic that year, and read "As You Like It," Macaulay's essay on Dr. Samuel Johnson, and Burke's speech on reconciliation.

Of course I could not possibly have done the work required at the Gilman School without Miss Sullivan's assistance. She was eyes and ears for me. I was generally taught in classes with other girls, and she sat beside me, and spelled to me everything that was said during the lesson. None of the teachers used the finger-language or manual alphabet except Frau Grote, my German teacher, and Mr. Gilman, the principal of the school. But no one realized more fully than dear Frau Grote how slow and inadequate her spelling was, compared with Miss Sullivan's; but, in the goodness of her heart, she laboriously spelled out her instructions to me twice a week, in order to give Miss

Sullivan a little rest. Mr. Gilman, too, kindly learned the alphabet, and read to me a part of "As You Like It," and the essay on Johnson mentioned above. Burke's speech, which we also read together, was in Braille, for which good fortune we were both unspeakably thankful; for Mr. Gilman's fingers never learned to make the letters rapidly or accurately. Indeed, awkward misunderstandings frequently arose, owing to the omission of letters, and sometimes even of whole words. Then, too, it was Miss Sullivan who looked up new words for me, and read notes and references; and when a required book was not in raised print, her fingers spelled it all out in my hand with infinite patience.

In June, 1897, I took my preliminary examinations for Radcliffe, Mr. Gilman reading all the papers to me by means of the manual alphabet. The subjects I offered were German, French, Latin, English, and Greek and Roman History. I passed in everything, and received "honors" in German and English.

In October, 1897, I returned to the Cambridge School in splendid health and spirits, having had a lovely, restful summer. I knew there was a hard year before me, but that did not trouble me. My heart was full of hope and courage, and the determination to succeed. But no sooner had I resumed my studies than unforeseen difficulties began to appear. The books, which had been ordered in England the previous spring, had not been printed, and it was some weeks before my Braille writer, on which I was to write my Algebra, arrived. Moreover, the Algebra and Geometry classes were so large that the teacher could not give me the special instruction I needed at the beginning. Miss Sullivan was obliged to read everything to me, as well as interpret for the teachers, and, for the first time in eleven years, it seemed as if her dear hand would not be equal to the task. But at last the apparatus which I needed and some of the books came, and our work was going more smoothly, when a serious difference of opinion arose between Mr. Gilman and Miss Sullivan, which finally resulted in my mother's withdrawing me and my sister, who was then with me, from the Cambridge School. This happened

in December, 1897, and I did not resume my studies until the following February.

After leaving Cambridge, it was arranged that Miss Sullivan and I should board with some friends in Wrentham, Mass., and continue my studies under the guidance of Mr. Merton S. Keith, of Cambridge. Mr. Keith came out to Wrentham once a week and taught me Algebra, Geometry, Greek, and Latin, Miss Sullivan interpreting his instruction. During the week I prepared my lessons, wrote my exercises on the typewriter, and sent them to Mr. Keith, who corrected and returned them to me. But, as Mr. Keith has prepared a paper for the "Souvenir" on his work with me, I am sure you will not wish me to go over the same ground. I will only say, I enjoyed my work with him more than I can express in words. He has done more than any of my teachers, except Miss Sullivan (although she seems more like a part of myself than a teacher), to store my mind with rich treasures of knowledge, which shall be a joy to me as long as I live. He made all my studies interesting, even Mathematics. He kept my mind alert and eager, and trained it to reason clearly, and to seek conclusions calmly and logically, instead of jumping wildly into space, as it were, and arriving nowhere. Moreover, he was always gentle and forbearing, no matter how dull I might be, and believe me, my stupidity would often have exhausted the patience of that phenomenally patient man, Job!

I took my final examinations for Radcliffe on the 29th and 30th of June. The subjects I offered were Elementary and Advanced Greek, Advanced Latin, Algebra, and Geometry. I worked by myself, the papers being copied for me in Braille. This arrangement worked very well in the languages; but in Mathematics it caused me much trouble and anxiety, the Braille used being different from what I had been accustomed to. However, a few days later I received a certificate of admission to Radcliffe, and I was glad to find that I had passed in all the subjects without a single condition.

Sincerely yours,

Helen Keller.



RADCLIFFE COLLEGE.

CERTIFICATE OF ADMISSION.

CAMBRIDGE, *July 4* 1899.

Helen Adams Keller

is admitted to the FRESHMAN CLASS in Radcliffe College.

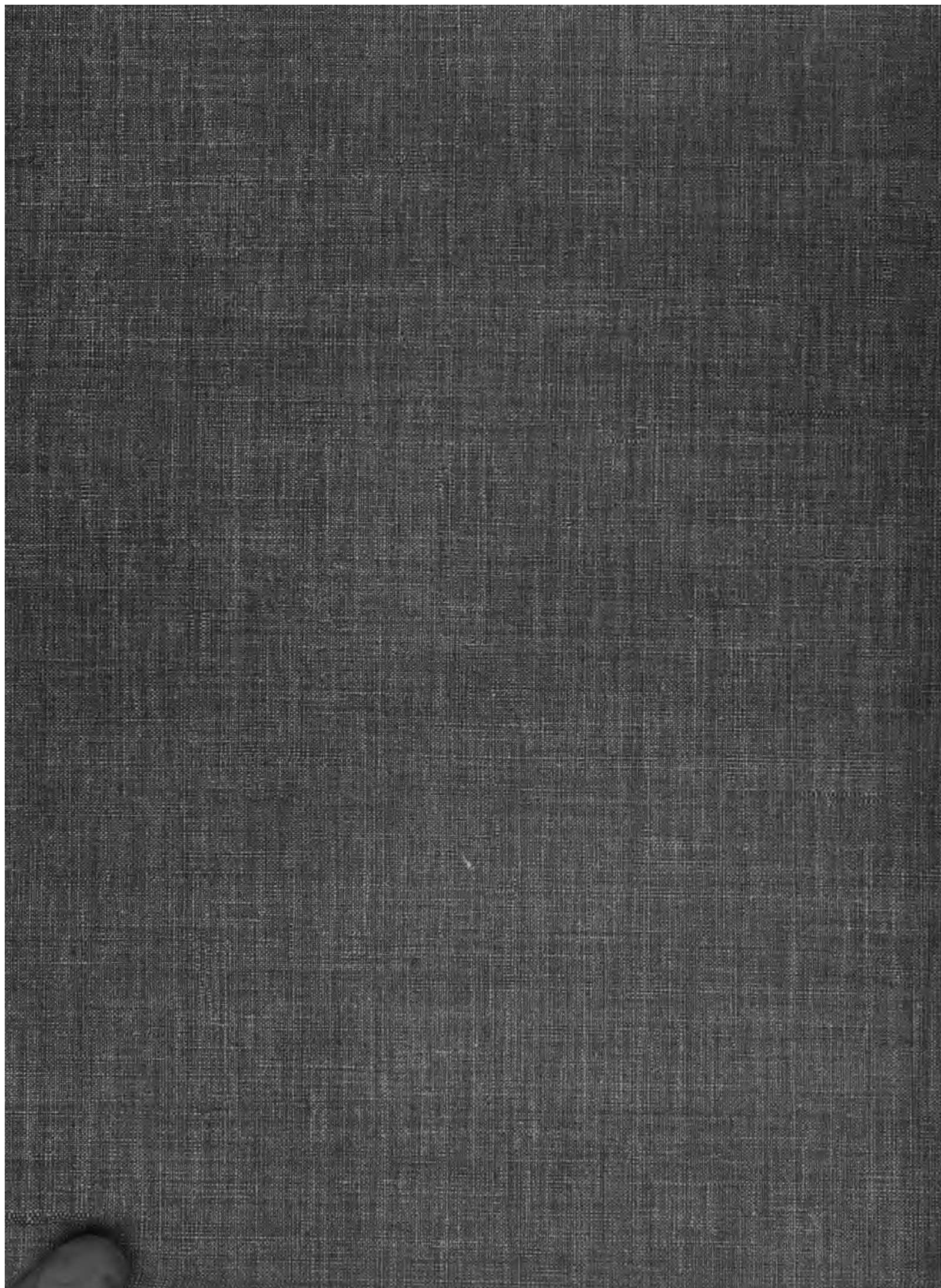
Agnes Swin
Dean of Radcliffe College.

Miss Keller passed with credit in Advanced Latin.



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